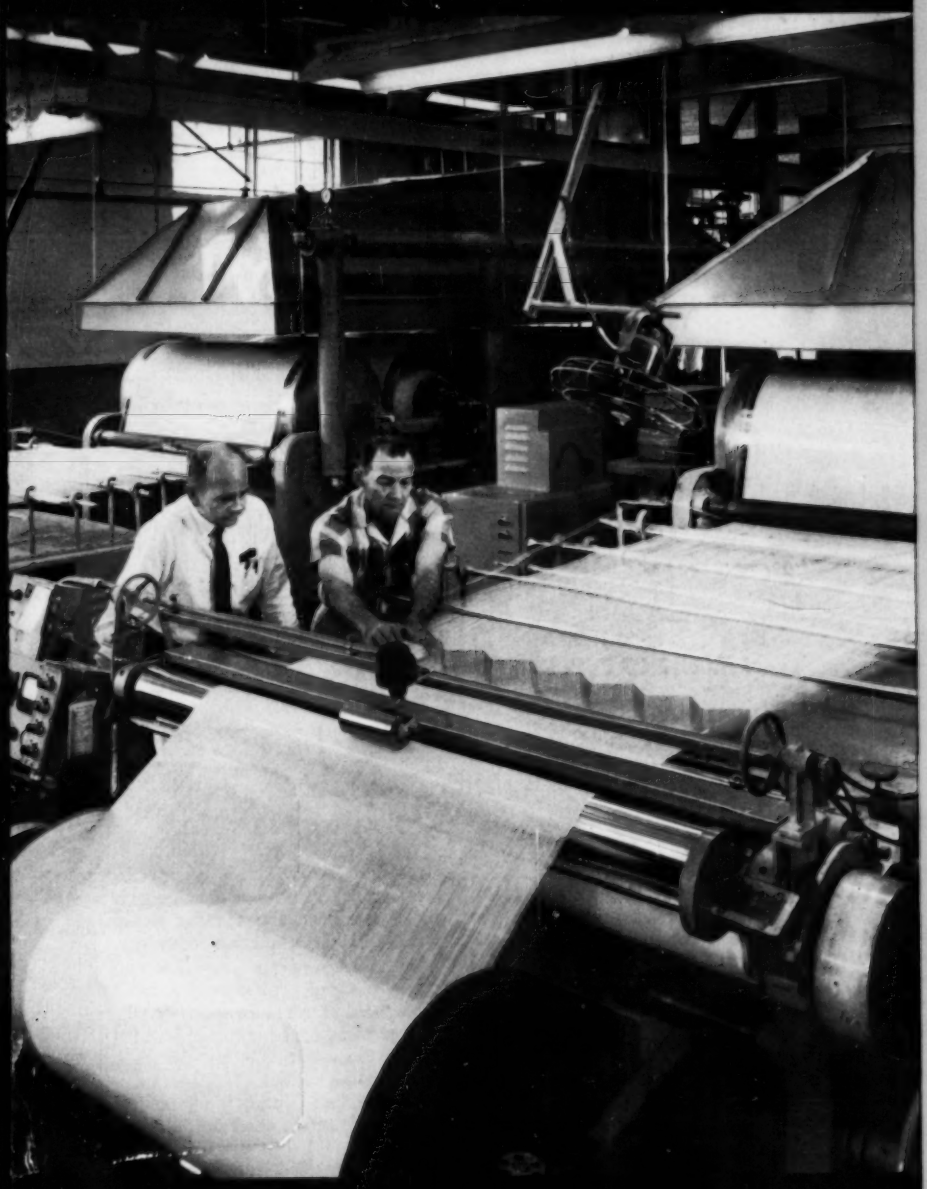
Textile World
MAY, 1959
A McGRAW-HILL PUBLICATION

The KNOW-HOW . . . KNOW-WHY Publication in Textiles



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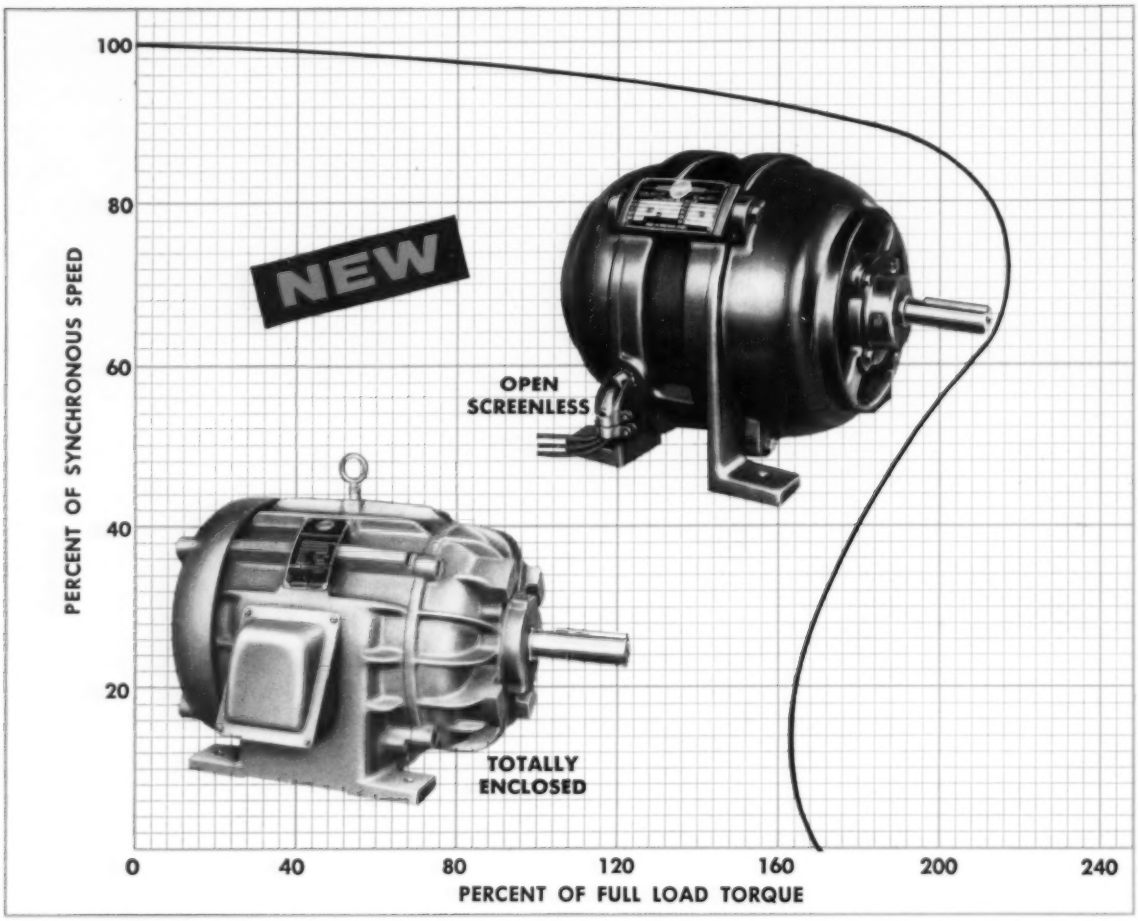

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TEXTILE BUSINESS

Textile World

MAY • 1959

Press Time . . .

Japanese Increase Export Quotas to U. S.

TOKYO — Japan announced that it will increase cotton-textile exports to the U. S. from 235-million to 247.2-million sq. yds. in 1959. The increase roused a storm of protest from U. S. mills.

[For earlier details, see p. 6.]

Mill Production Hits 17.7% Gain Over Last Year

Mill production held steady last month at the hot 113 on TEXTILE WORLD's Index chart (p. 10) reached in March, registering a 17.7% improvement over April a year ago.

That makes 12 months of rising production from the April 1958 low, except for minor dips in the two holiday seasons, July and December-January. That is the longest sustained rise in several years. In no year during the 1954–1958 business cycle did such a long rise occur.

Best estimates now are that there will be only a minor seasonal dip this summer, with the low point coming with July vacations, and then another sharp rise beginning in August or September and carrying through the rest of the year. The Index line is likely to carry beyond the present 118 top line of the chart.

•

Mill production nearly always hits a year's low in July. Even in a downtrend year such as 1957, a low, followed by some recovery, was registered in July.

If production is measured from July to July, it looks now as though the present 12-months period from July 1958 through June 1959 may be the best textile-production year since July 1955–June 1956.

In those 12 months, the TEXTILE WORLD Index averaged 112. For the 12 months July 1956–June 1957, the Index averaged 109. Chances are good now that May and June production will hold up well enough to wind up the July 1958–June 1959 period with an average somewhere between 109 and 112.

Spring Sales Surge Under Way in Autos

DETROIT—The automobile industry is now all but certain to consume over 100,000,000 yds. of fabric and cord and chafer fabric for 30,000,000 new tires in its 1959 models.

The first spring sales upsurge since 1955 hit Detroit last month, and it looks certain now that 1959 will be at least a 6-million car year.

Sales for the first 10 days of April, the traditional bellwether period, totaled about 162,000 units. This daily selling rate (based on nine working days) of 18,000 is substantially above the 13,500 figure posted for the same period last year and about on par with 1957, a model year that saw 6,212,291 passenger cars produced.

Ford Motor Co.

Ford Div. on March 31 sold 6,500 cars, the highest single day of the year and 30% better than the daily average for the month. Total March sales were a whopping 64% better than in 1958. A slow starter this year, Mercury surged 32% ahead of last year during the first 10 days in April. Production schedules for the April-June quarter have been boosted accordingly. Edsel, too,

Store Sales Still Gaining

With Easter sales now in the record, department-sales jumped another 1% above sales last year. For the first two and a half months of this year, they ran only 8% ahead. But for the first three and a half months, they stepped up to 9% ahead of the same 1958 period.

The San Francisco and Kansas City districts continued to lead the improvement parade, according to Federal Reserve Board figures. San Francisco ran 13% ahead of last year and Kansas City 11%.

Here's how sales in the 12 districts compared with last year for the first three and a half months.

	(%)
Boston	+5
New York	+3
Philadelphia	+9
Cleveland	+6
Richmond	+9
Atlanta	+8
Chicago	+8
St. Louis	+9
Minneapolis	+4
Kansas City	+11
Dallas	+9
San Francisco	+13
U. S.	+9

Rayon and Acetate Shipments Up 25½% Over March 1958

Acetate yarn and rayon shipments in March jumped 25½% above shipments in March 1958 and 16½% above February shipments, the Textile Economics Bureau announced last month.

Shipments rose to 98.9-million lbs., up 14.9-million lbs. from the 85-million lbs. shipped in February.

U. S. production in March amounted to only 95.1-million lbs.; so March shipments reduced producers' stocks by 3.8-million lbs. Stocks on hand at the end of the month amounted to 95.2-million lbs.

Here's how different types of yarn and fiber moved:

- **High-tenacity rayon,** 29-million lbs.—an increase of 10½% over February and 24½% over March 1958.

- **Regular- and intermediate-tenacity rayon,** 17.3-million lbs.—a gain of 29% over February and 31% over March 1958.

- **Acetate filament yarn,** 19.9-million lbs.—an increase of 25% over February and 31% over March 1958.

Acetate staple production was up 10% over February and 19% over March 1958.

Nylon Carpet Yarn Posts Best Period

Nylon carpet yarn posted its best period since introduction day, a figure 56% higher than last year.

General Motors

Chevrolet sales in March were up 21% over March 1958, and the selling pace was accelerating in April. General Manager E. N. Cole said, "If the current public demand for our product continues, Chevrolet should record one of its best sales years in history."

Pontiac, on April 14, less than six months after full-scale assembly began last fall, produced unit number 217,303 to match its entire 1958-model-year production. Sales continue at the highest daily rate since 1955, boosting the division to first place in the medium-price field.

Cadillac finished the quarter with an all-time record of 39,491 units. Buick and Oldsmobile have both posted fairly substantial gains over 1958 but can't claim records.

Chrysler Corp.

Chrysler Corp., despite heavy losses from its own and supplier strikes, produced 30,000 more cars in the first three and a half months of this year than in the same period last year. Dodge showed the most marked increase, with a total of 50,163 cars, compared to 29,465 last year.

The "Little Two"

Sales of the "Little Two" companies, American Motors and Studebaker-Packard, reached the point that the companies are not so little any more.

Rambler was running 141.8% ahead of last year, which was also a record year. Sales of the 1959 model have already exceeded the 1958 year's total.

Burgeoning Studebaker had its best March since 1953, with 14,207 passenger cars. Schedules have been upped to 84 units an hour, and a further increase is expected to avoid expensive overtime. Saturday work has stopped, but an average weekly output of 3,700 units is being maintained.

More-Stable Wool Price Sought by Australia

MELBOURNE—Agitation for more-stable wool prices may pay off before this year is over.

The Australian Government is now seriously considering inviting the major wool-producing countries for a conference to study means to establish better marketing methods for wool and maintain more-stable prices.

Wool has had rough going for several years, and wool income in this country has suffered. There is widespread belief that price instability has a great deal to do with wool's loss of markets to man-made fibers.

●

The present system of auction selling is under strong attack. A recent judicial investigation in Australia revealed that strong

speculative "fixing" keeps the price of wool at artificial levels.

Unless the Government's plan for an international agreement on better marketing methods materializes, the Government is almost certain to put disruptive speculation under some sort of control.

If this step is necessary, either a referendum of wool growers will be taken or leading wool-grower organizations will be consulted, or both.

•

The type of international marketing machinery now favored is something similar to the present International Wheat Agreement. A basic one-year price for wool would be set, with a wide range of small variations for different qualities of marketable wool permissible.

Some wool men estimate that such a price-stabilization method would net an increase of 25% in world wool consumption.

Coupled with the marketing method would be a substantial promotion for wool. Money to pay for it would be levied against wool interests, and the program would be administered by the International Wool Secretariat.

Mills Plan To Spend $321-Million This Year

The textile industry plans to spend $321-million for new plant and equipment this year, an increase of 11% over the $288-million spent last year.

Present plans call for 33%, or $105.9-million, to go for expansion and the other 67%, $215.1-million, to go for replacement and modernization, according to the 12th annual McGraw-Hill survey of business plans, completed last month.

The $321-million will be spent as follows:

Machinery and equipment (other than vehicles)	$273.8	(million)
Buildings	42.4	
Vehicles	4.8	
Total	$321.0	million

•

Preliminary plans for 1960, 1961, and 1962 call for plant and equipment expenditures of $324-, $326-, and $342-million—a four year (1959–1962) total of $1,313-million.

If the same distribution for machinery, equipment, and buildings is maintained, the four-year totals will be:

Machinery and equipment	$1,120.0	(million)
Buildings	173.3	
Vehicles	19.7	
Total	$1,313.0	million

•

Money for the investment will come mainly from steadily increasing depreciation allowances.

lion lbs.—up 14½% from February and 9½% from March 1958.

• **Rayon staple and tow,** 32.7-million lbs.—an increase of 17% over February and 35% over March 1958.

Senate May Investigate North Carolina Labor Violence

WASHINGTON—The Senate Rackets Committee may investigate the recent wave of violence in North Carolina textile-mill strikes, a member of the committee warned last month.

The committee has held no hearings in late weeks because the members were busy with senate legislation. When it resumes hearings, the North Carolina violence and the alleged underworld infiltration in the juke-box and coin-machine industry are both likely projects, the committeeman said.

If the strike violence is investigated, two likely witnesses are Robert Dixon Beame, a hosiery workers union organizer who says he was assaulted and run out of Franklin, N. C., and Boyd Payton, a TWUA officer who said he was assaulted during the strike at Henderson, N. C.

Opelika Mfg. Shares Now Traded on ASE

Common-stock shares of Opelika Mfg. Co. began trading on the American Stock Exchange late in March, after having been traded Over the Counter since 1951.

Recent closing price of the stock was 16¼, with a 1959 high of 17⅛ and a low of 15¼.

The company specializes in manufacturing textile supplies for linen-supply firms and washable apparel for institutional and industrial rental.

Sales in the fiscal year ended Sept. 30, 1958 were $18,489,839.

For the first five months of 1959, sales were 6½% ahead of the same period in 1958.

Mill Failures— Up in March, Down for Year

Mill failures in March rose to 11 firms with liabilities of $927,000, bringing the total for the first three months of 1959 to 18 failures with liabilities of $1,801,000, Dun & Bradstreet announced last month.

That compares with eight failures with liabilities of $1,012,000 in March 1958 and a total for the first three months of 1958 of 25 failures with liabilities of $3,079,000.

Northern Mills and Union Agree on New Contracts

Labor agreements were announced last month by several New England mills, among them Berkshire Hathaway, Continental, Ponemah, Waumbec, and others.

Terms were a 7% wage increase, amounting to about 10¢ an hour, and adoption of a $1.25-per-hr. minimum wage. Contracts are to hold for three years.

Textron Increases Its Nontextile Holdings

Textron, Inc., continued its diversification out of textiles with the purchase of Townsend Co., a metalworking firm.

Several years ago, Textron was 100% textile; but in late years diversification in other lines and reduction of its textile holdings reduced textiles to 25% of Textron's business. The Townsend Co. purchase reduces the textile share of Textron's business still further.

By late March, Textron had bought 225,000 shares of Townsend stock at $20 a share—a total of $4,520,000 worth and 85% of the shares outstanding.

Townsend has 10 plants manufacturing rivets, fasteners, and special metal products for the automobile and aircraft industries.

Tire Sales To Set Record

A new record in tire sales will be set in 1959, B. F. Goodrich estimates. Sales of all types of tires are expected to hit 114-million, compared to 104,680,000 in 1958—an increase of 9,320,000 tires, almost 9%.

Passenger-car tires are expected to account for nearly all the increase. They should hit 93,500,000, just short of 9% above 1958 sales.

Cone To Close Dwight

Cone Mills Corp. announced that it would close its Dwight plant in Gadsden, Ala., as soon as stock in process has been run out.

The plant was on strike from March 16; but TWUA agreed to continue the old agreement on an indefinite basis, with the company having the right to cancel on two weeks' notice.

Last year, mills reported depreciation allowances of $315-million. This year, allowances rose to $331-million, $10-million more than is now planned for capital expenditures this year.

For the years 1960, 1961, and 1962, allowances of $348-, $358-, and $372-million are expected—making a four-year (1959–1962) total of $1,409-million, $96-million more than present estimates of capital expenditures.

•

Other significant results of the survey were:

- Mills expect a 10% increase in sales in 1959 over 1958 and a further 5% increase by 1962.
- Employment will rise very little. Mills expect to employ 3% more people in 1959 than 1958 and only another additional 1% by 1962.
- Spending in the 1960–1962 period will swing from 33% for expansion and 67% for modernization to a 29%–71% distribution.

Per-Capita Fiber Use Hit 20-Year Low in 1958

Total fiber consumption per person in the U. S. dropped to 33.9 lbs. last year—the lowest annual per-capita consumption since 1938, according to a report by the Dept. of Agriculture.

Since 1940, per-capita consumption dropped below 40 lbs. a year only five times: in the recession years of 1949 and 1954 and in each of the last three years, 1956, 1957, and 1958.

For the five years 1954–1958 covered by the last business cycle, consumption averaged 37.2 lbs. per person per year. That's the lowest five-year average since the late 1930's.

Japanese-Imports Quota Triggers Four-Months Fight

WASHINGTON—The weakness of the Japanese-imports "voluntary quota" plan broke wide open last month.

In a drive for about a 6% increase in its exports of cotton goods to the U.S., Japan seemed bent on gambling that U.S. mills would not press for a switch of control over imports from Japan to the U.S., or would not succeed if they did press for it.

Here's how things went:

- After four months of negotation, the U.S. and Japan still could not get together on a change in the quota. For the last two years, 1957 and 1958, the quota, based on 1956 imports, was set at 235-million sq. yds.
- Japan drove for an increase to 249-million sq. yds., with strict limits on velveteens and ginghams. U.S. negotiators from the State and Commerce Depts. virtually agreed.
- Word leaked out about the 249-million figure, and strong protests from U.S. mills broke over the talks.

• Caught between U.S. producers and the Japanese, Administration spokesmen stopped the talks to see what could be done. Asst. Sec. of Commerce Henry Kearns and Japanese Ambassador Koichiro "compromised" by dropping the 249-million sq. yds. to 247.2-million. From Tokyo came word that the agreement would be signed late in March or in early April.

• Another storm of protest broke from U.S. producers. Japan hinted that it hoped U.S. officials would accept the "compromise" in spite of U.S. mills' objections. And U.S. officials pointed out that the Japanese were "within their legal rights" in adopting any quota limit or even no limit.

•

At mid-month U.S. mills were opposing any increase, no matter how small, in the 235-million sq. yds. In a series of meetings with Sec. Kearns, domestic producers stood firm on their argument that the U.S. textile industry has not recovered to the 1956 level on which the quota was originally based and on which the five-year agreement was drawn.

Tokyo grew a little more cautious. As this issue of TEXTILE WORLD went to press, it looked as though the Japanese would not risk a show-down. Officials in Washington expected more talks and another "compromise" offer somewhat below the 247.2-million sq. yds. but with strick checks against lifting one unused quota to fatten another one that has been filled.

•

It was generally recognized that U.S. mills have a strong position. The "voluntary" quota was established in early 1957 only after the U.S. textile industry showed enough political support in Congress to get something done about Japanese imports if the Administration didn't. And most observers think the tenor of Congress is even more favorable now.

Another ace in the hole for U.S. mills is the Pastore report. If imports rise substantially, OCDM (Office of Civil and Defense Mobilization) is committed to investigate under the national security clause of the Trade Agreements Act.

In the face of these strengths, it didn't seem likely that Tokyo would risk a show-down.

Actually, a great many textile people would welcome it. As long as Japan is reasonable, they are willing to go along with the "voluntary" plan. But most textile men prefer U.S. control, with some sort of fixed, dependable formula for determining the quota, perhaps similar to the Geneva Reservation system now in effect for wool fabrics.

Choice B Cotton To Be 22% of Crop

Almost 22% of the cotton acreage planted this year will go to Choice B cotton, the Dept. of Agriculture announced.

Of an original allotment of 16,310,000 acres, 13,180,000 are expected to go to Choice A (full support price) cotton and 3,582,356 to Choice B (lower than support price) cotton.

WORLD BRIEFS . . .

Russia Moves Into Iraq

BEIRUT—Iraq is now changing over from Western aid for its textile and other industries to aid from the Soviet Union.

Russia will place $140-million at the disposal of the Iraqi government at 2½% interest to be used in seven years and repaid in 12 annual installments.

As part of the agreement, the nine-year-old Iraq Development Board, which had one American and one British member, will be dissolved. A new Board with only Russian and Iraqi members will be set up.

Shortly after the Soviet-Iraqi agreement, the Iraqi government began terminating contracts with Western firms for technical assistance. One of the contracts canceled was with a firm giving technical assistance on a $10-million textile project at Hilla. The new mill was planned to weave 22-million yds. of rayon cloth a year.

Plans under the new agreement with Russia call for four textile mills and apparel plants:

• **A woolen mill,** to be delivered in 1962, for scouring wool and weaving 2-million meters of cloth a year.

• **A 60,000-spindle cotton mill** to turn out 1,100 tons of yarn and 30-million meters of cloth a year.

• **A knitting mill** to produce 6-million pairs of socks and stockings, 4-million pieces of underwear, and 1-million pieces of other clothing.

• **A cutting-and-sewing plant,** to be delivered in 1961, with 130 sewing machines to handle 3-million meters of cloth a year.

•

British Knitters' Pay Cut

LONDON—Some 3,700 full-fashioned knitters in British mills received pay cuts up to four pounds ($11.20) a week under a new wage structure announced late in March. The pay cut took effect early last month.

•

South African Suits Will Hit U. S. Market

JOHANNESBURG—A $2.8-million order for men's suits made in South Africa has been received here from "U. S. sources." The contract calls for delivery of 400,000 suits to the U. S. and Canadian markets.

The suits will be made largely of South African cloth and will carry the label, "Made in Cape Town, South Africa."

•

"Jet" Loom Now Commercial

VIENNA — The Czechoslovakian "jet" loom shown at the Brno machinery show in 1956 will be on display again at the Dornbirn (Vorarlberg province) textile fair July 31-Aug. 9.

Several of the looms were said in a recent report to have been running since late 1956 in the Semily plant in Bohemia province, Czechoslovakia, at an average speed of 350 picks per minute and producing about 11 yds. of cloth an hour.

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Courtaulds Cuts Fiber Price

LONDON — Courtaulds Ltd. announced a cut in prices for rayon staple and tow and crimped staple early last month. The price reduction amounts to about 2¢ a lb.

This is the first price change for standard rayon since July 1, 1953, when the price was cut slightly more than 3¢ a lb. to 28¢ a lb.

The new cut brings the price down to about 26¢ a lb.

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British Machinery to Russia

LONDON — A British company, Ernest Scragg & Sons Ltd., has secured an $840,000 order to supply machinery for the manufacture of man-made fibers at a plant now under construction in Russia.

During the last year Scragg has sold some $3-million worth of this type of machinery to Russia.

•

India To Help Mills

BOMBAY—The Indian government has decided to provide financial assistance to textile mills for modernizing their plants. Reason: Indian textile exports are losing their markets to Red China.

The National Industrial Development Corp. will provide short-term loans to mills for installation of new equipment and replacement of old equipment. NIDC will finance 75% of the purchase when a mill puts up

Since there is usually some underplanting, the total planting is expected to be only slightly above 16-million acres.

A crop of about 13.3-million bales is expected, according to calculations by the Cotton Dept. of the National Bank of Commerce, Memphis, Tenn.

That compares with 11.4-million bales produced in 1958, 10.9-million in 1957, and 13.2-million in 1956.

Mill Profits— Better and Improving

After three quarters of extremely poor profits in the textile industry, industry profits more than doubled the three-quarters average in the third and fourth quarters of 1958; and early operating statements of mills indicate that further improvement is being made in 1959.

For several years, total-industry profits have been far too low, running less than 3% of sales in every quarter since the fourth quarter of 1951. For the three quarters prior to the third quarter of 1958, industry profits ran 1.5%, 0.4% and 1.3% of sales.

Late last year, they rose to 2.4% of sales in the third quarter and to 2.5% of sales in the fourth quarter—still only about half the average profit margin of nondurable-goods industries but considerably better than late 1957 and early 1958.

•

Average industry profits have little meaning so far as the profits of individual companies are concerned. Even in the poor three quarters, some mills turned in good profits; and if present improved profits were to double, there would still be many mills operating in the red.

But as average industry profits improve, earnings of efficient companies move up faster than the industry average.

Financial reports on manufacturing industries issued by the Federal Trade Commission and the Securities & Exchange Commission always lag a full quarter. For example, the report on the fourth quarter of 1958 was issued only last month. Therefore, earnings for the first quarter of 1959 are not available yet.

But interim reports indicate that profits are far easier to come by now than they were a year ago. For the industry as a whole, profits have a fair chance of hitting 3% of sales for the first time in seven years.

•

• **West Point Mfg. Co.,** for example, just reported six-months profits for the period ended Feb. 28 at 4.2% of sales.

Sales were $70,154,000, a 19% increase over the $58,866,000 sales in the year-ago period.

Net income hit $2,999,000, 75% better than the $1,714,000 in the same period of the 1958 fiscal year. That amounted to 99¢ a share, compared to 56¢ a share in the same period last year.

J. L. Lanier, president, reported to stockholders, "About 60% of our annual earnings is in the first half of each fiscal year. It

is too early to predict what our profit for the year will be; but as of now, the future looks better than it has for some time."

•

• **United Piece Dye Works,** burdened by some unprofitable operations in 1957, cut away the dead wood and turned in an extremely efficient operation in 1958.

Net profit ran 7.6% of sales in a year when average textile-industry profits were only 1.6% of sales.

On sales reduced from $10,392,717 in 1957 to $6,758,040 in 1958, the net-profit picture changed from an operating loss of $52,120 in 1957 to a profit of $513,307 in the difficult year of 1958.

In a report to stockholders, President Charles Blount, Jr. said, "During the first quarter of 1959, operations have been profitable and working capital has increased."

•

But better industry business is not a guarantee of company profits.

• **Indian Head Mills,** in the first fiscal quarter ended Feb. 28, suffered a sharp drop in profits on a slight increase in sales.

Sales ran $10,210,853 in the first fiscal 1959 quarter, compared to $9,890,982 the year before.

Net profit dropped from $445,652, equal to 68¢ a share in 1958 to $303,715, equal to 39¢ a share in 1959.

That was a drop from a profit of 4.5% of sales last year to slightly under 3% this year.

However, Indian Head has been operating at a profit margin well above the industry average, unless it slipped to or below the average in its 1959 first quarter.

•

Still better profits may be in the offing.

The price of cotton is expected to drop when the 1959 harvest gets under way because of the bigger crop that is expected and because of the new Choice B cotton available at less than support price for the first time this year.

If mill prices can be maintained at present levels, the lower-price cotton will increase mill margins and considerably improve profits.

25%-Tariff Wool Imports Limited to 13.5-Million Lbs.

WASHINGTON—The 1959 cut-off point for wool-fabric imports at 25% tariff duty was fixed at 13.5-million lbs. by Pres. Eisenhower last month. On imports above that amount, the duty will jump to 45%. However, 350,000 lbs. of high-priced, high-quality fabrics produced mainly in the United Kingdom, France, and Italy will be admitted over the quota at 30% duty.

The break-point is fixed at 5% of the average annual U.S. production for the preceding three years. In 1958 it was 14.2-million lbs., and in 1957 it was an even 14-million lbs.

25%. The 75% will be repayable in equal annual installments at 6% interest.

This represents an about-face for New Delhi. Until now it has frowned upon modernization because it displaced workers.

But the loss of export markets has alarmed the government. Last year, for example, gray-cloth exports to Britain dropped from 45,730,000 yds. in 1957 to 36,722,000. Red China's exports to Britain rose from 3,938,000 yds. in 1957 to 28,321,000 yds.

Indian exports to Indonesia dropped from 7,700,000 yds. in 1956 to 4,600,000 yds. in 1957. In the same period, Red China's exports to Indonesia almost doubled, rising from 4,900,000 yds. in 1956 to 8,600,000 yds. in 1957.

•

Swiss Credit to Egypt

BEIRUT — Switzerland and the United Arab Republic have signed an agreement for a credit account of $6-million in Swiss francs for the purchase of spinning and weaving machinery.

The credit is open for five years, and the fund is repayable in semi-annual installments at 5% annual interest.

•

Stretch Nylon in Israel

TEL-AVIV—The textile firm of Isranyl Ltd. of Jerusalem has concluded an agreement with the Louis Rochgute textile group of Lyon, France, for technical assistance in setting up facilities and producing stretch nylon yarns and textured yarns.

Isranyl, in operation only a few months, now produces 120,000 kilograms of yarn a year, 80% of which goes to export.

•

New Soviet Fiber Process

MOSCOW—A breakthrough in the problem of producing Russia's Kapron from benzol instead of phenylic acid has been reported by the Uzbek Academy of Science. Kapron is one of the Soviet Union's main nylon-type man-made fibers.

The Uzbek Academy's Institute of Chemistry is first to succeed in separating a pure polymeride without any harmful admixtures. Soviet scientists elsewhere have been working on the same problem for some time. Benzol is available in almost unlimited quantities. Phenylic acid is in short supply.

Index of manhours worked in the textile industry adjusted for changes in productivity

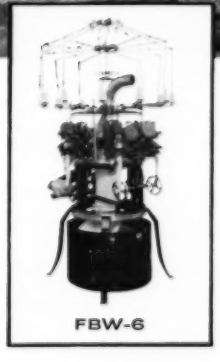
Textile World's Monthly Indicators

	Latest Month	Previous Month	Year Ago
Textile World's Index (1954=100)	**113**	**113**	**96**
Employment (thousands) B.L.S.	957.8	950.6	934.0
Production Workers (thousands) B.L.S.	866.1	859.3	843.0
Weekly Earnings B.L.S.	62.87	61.66	56.25
Hourly Earnings B.L.S.	1.56	1.53	1.50
Weekly Hours Worked B.L.S.	40.3	40.3	37.5
Production Index (1947–49 = 100) F.R.B.	113	112	94
Wholesale Price Index (1947–49 = 100) B.L.S.	93.7	93.7	94.0
Manufactures' Sales (million $) Commerce	1,123	1,102	1,001
Manufacturers' Inventories (million $) Commerce	2,461	2,487	2,638
Inventories-to-Sales Ratio	2.19	2.26	2.64
Exports (million $) Commerce	70.1	75.6	118.0
Imports (million $) Commerce	80.9	88.4	69.9
Stock Price Index (1941–43 = 10) Standard & Poor's	27.34	26.83	19.27
Failures (number) Dun & Bradstreet	11	2	8

National Economic Indicators

	Latest Month	Previous Month	Year Ago
Industrial Production (1947–49 = 100) F.R.B.	147	145	128
Consumer Price Index (1947–49 = 100) B.L.S.	123.7	123.8	122.5
Wholesale Price Index (1947–49 = 100) B.L.S.	119.6	119.5	119.7
Population (millions) Census	173.6	173.4	170.6
Unemployment (millions) Census	4.4	4.7	5.2
Employment (millions) Census	63.8	62.7	62.4
Personal Income (billion $) Commerce	368.6	365.4	348.7

For more data, circle A-1 on Reader Service Card →



FBW-6

Knitted Elegance

"Elegant" . . . . . the only way to describe the luxurious coat fabrics produced on Wildman Jacquard "Hi-Pile" knitters. • *"Versatile"* best describes the capabilities of this unique machine. With a range of fabrics from glamorous outerwear to industrial coverings, the Wildman Jacquard "Hi-Pile" knitter is a sound investment. • For complete information write:

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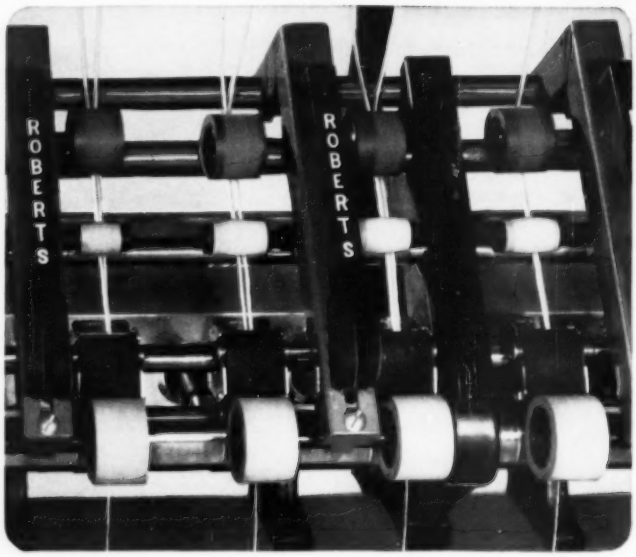
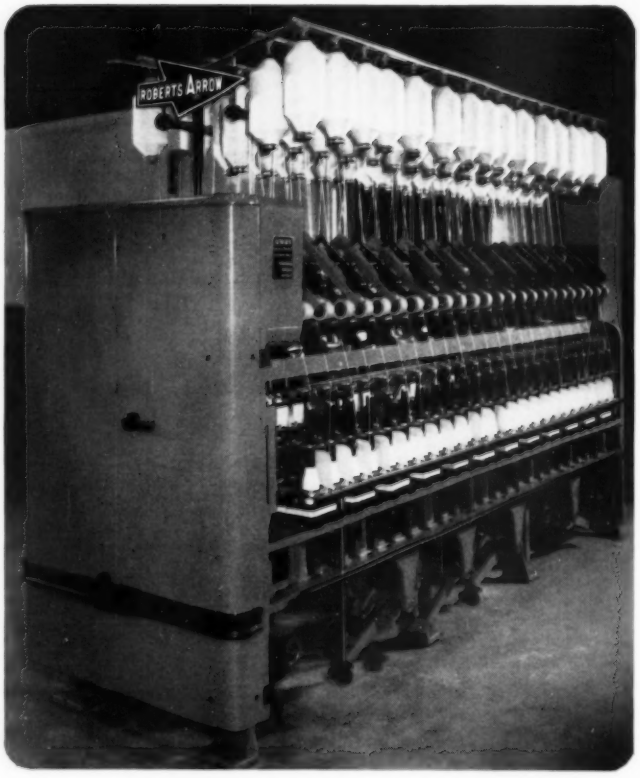
ROBERTS ARROW *LONG FIBER* SPINNING

- Any Fiber or Blend Synthetic or Natural
- Any Staple Length From 1½ to 8 Inches
- No Roll Setting Changes Needed at Any Time
- All Ball Bearing Construction For Smooth Operation



WITH ROBERTS *PermaSet* DRAFTING

ROBERTS ARROW



WM-2 ARROW *ShortFlo*

Rugged Chassis with Ball Bearings Throughout

Unitized Sectional Construction

Four-Roll Double Apron Drafting System

For Long-Staple Spinning, 100% or Blended

Drafts: 20 to 25 for Wool and Blends
25 to 50 for Synthetics and Blends

Front Roll Pressures from 90 to 120 pounds

UnitVac Power Suction Cleaning with Individual Removable Flutes

Roberts AeroCreel Handles Large-Package Roving

Simplified Reverse Twist Arrangement

Completely Adjustable Draft, Lay, and Twist Constants

One Master Set of Gears for All Changes

Actual mill tests have proved that the ARROW WM-2 Worsted Frame gives higher quality yarns with fewer ends down and more even running at higher drafts and higher front-roll and spindle speeds.

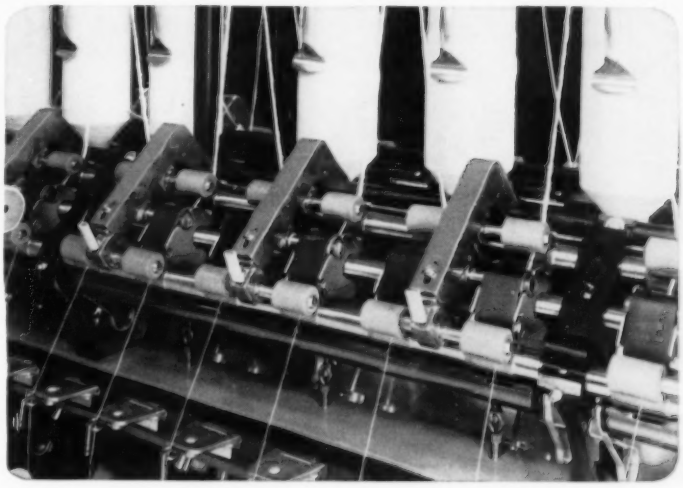
ROBERTS COMPANY
SANFORD, NORTH CAROLINA

For more data, circle A-2 on Reader Service Card

THE MOST SENSIBLE ANSWER TO GADGET-FREE TOP ROLL SUSPENSION

ROBERTS *PosiWate* SUSPENSION SYSTEM

Elegantly simple, the Roberts PosiWate Top Roll Suspension System is completely free of hooks, unpredictable short springs and other gadgets. PosiWate recovers the best features of positive weighting and weight distribution used and proven in several million spindles insuring uniform performance from spindle to spindle.



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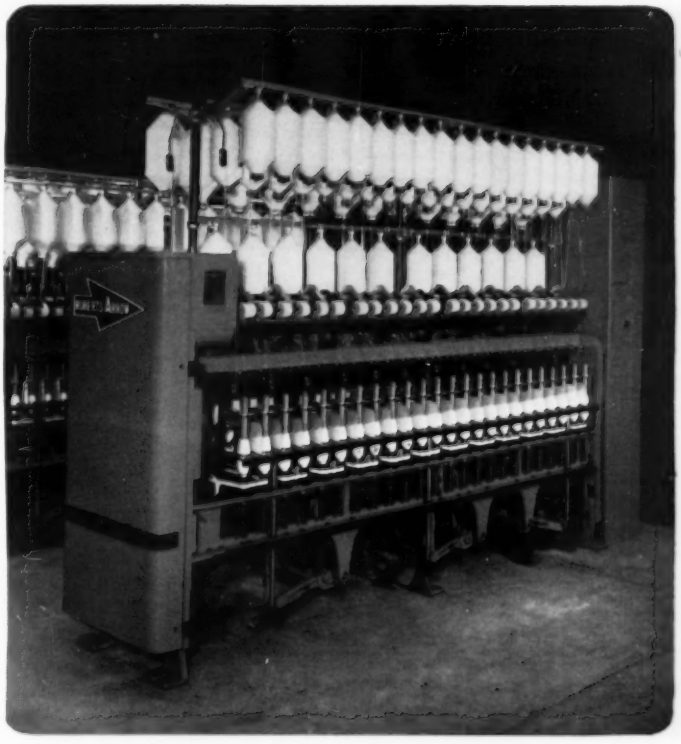
ROBERTS ARROW

ALSO AVAILABLE AS CHANGE-OVER MODERNIZATION ON ANY MAKE OF FRAME



Very Advanced

ARROW SPINNING features:

- PosiWate Top Roll Suspension
- UnaRing Balloon Control
- EvenGrip Fluted Bottom Rolls
- Roberts Supreme Ball Bearing Spindles
- Double-Apron High Draft System
- UnitVac Power-Suction Cleaning
- Roberts All-Ball-Bearing Head
- Unitized Sectional Frame
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Puebla, Pue.

ROBERTS COMPANY

SANFORD, NORTH CAROLINA

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Now...at no increase in price

40% more HP...longer service life

with Gates Vulco Ropes

Gates brings you, through *Specialized* Research in V-Belts, another important cost-saving advance:

Now — at no increase in price — the horsepower rating of Gates Vulco Ropes has been increased 40%.

As replacements on standard drives, these V-Belts with 40% more load carrying ability will give longer service. Longer life reduces down-time, and cuts belt replacement costs.

And as the tag tells you: Belts labeled "Gates Vulco Rope" or "Gates Hi-Power" are identical in construction and can be used interchangeably in matched sets.

Available Now from your nearby Gates Distributor

Today, all Vulco Ropes in Gates distributor and warehouse stocks have the new higher horsepower rating.

See the Yellow Pages of your phone book for your nearest Gates V-Belt distributor.

Designing NEW Drives?

For new drives, Gates now offers you the *new Super HC V-Belts and Sheaves* — the most advanced concept in power transmission in 25 years. The Super HC Drive is far more compact . . . takes up to 50% less space. Costs less, too. You save as much as 20% over present V-Belt drives. Ask your nearby Gates distributor for Handbook DH-900 entitled, "The Modern Way to Design V-Belt Drives."

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Gates
World's Largest Maker of V-Belts

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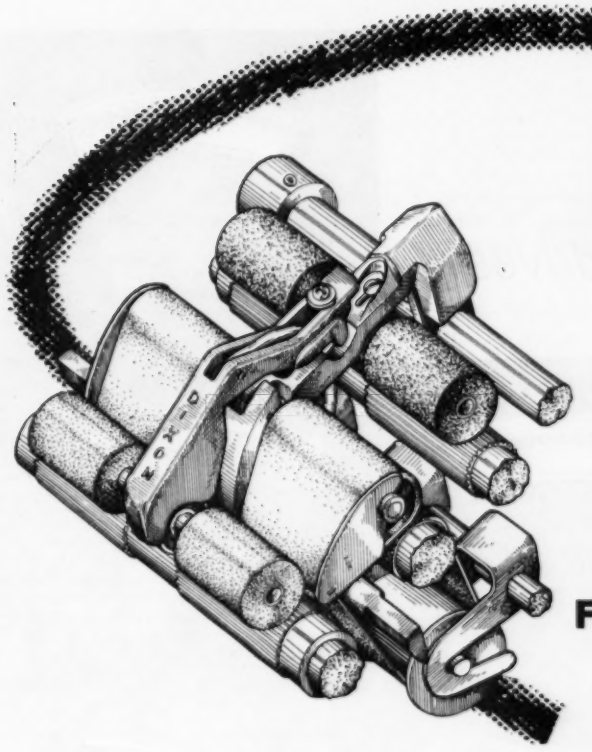
Gates VULCO ROPE Hi-Power V-Belts



For Roth System Spinning...

FAST PAY-BACK AT MINIMUM PAY-OUT... with a Dixon engineered changeover plan

Dixon offers the perfect balance of a proven product plus engineering know-how . . . a combination which has produced many fast pay-back changeover plans for spinning mills*. Each Dixon plan is more than just equipment. Our engineers will gear the program to the mill's cash flow, helping to provide major economies on a systematic schedule.

While Dixon Spinning Changeovers are often installed complete in one operation, many mills take advantage of our multi-step changeover program. On Roth System Frames, the usual plan calls for first adding new middle top rolls, aprons, and cages. Immediate cost-savings result through less lubrication, fewer laps and ends down, reduced cleaning . . . AND LONGER DRAFTS!

Systematic completion of the Double Apron Roth changeover can be made to suit the individual mill. The final Double Apron Roth changeover eliminates all oiling and cap bars, increases drafts, and gives our customers the most competitive spinning efficiency:

- Middle and back rolls run on RULON . . . the oil-free bearing that never is lubricated . . . outwears nylon 12 times.
- The Dixon patented self-aligning front roll rides on a hardened and ground, pre-lubed, sealed, precision ball bearing which is guaranteed for years and years and never requires lubrication.
- All parts are maintenance free. Pay-back on your investment is a matter of months.
- Productivity and quality improve. Yarn is cleaner . . . seconds decrease.

Compare "Pay-Out versus Pay-Back" on *both* Roth System changeovers being offered to the trade and you'll buy Dixon. Ask for our detailed report showing how an actual installation was completely paid for in 25 months and is now saving $1.50 per spindle per year by using Dixon Changeovers.

Dixon Corporation, Bristol, Rhode Island. Southern Sales: Dunson & New, Inc., Box 9202, Greensboro, N. C.; Box 321, Greenville, S. C.; Box 445, West Point, Ga.

*Here are a few of the more than 2,000,000 spindles installed:

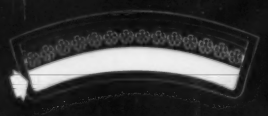
Mill	Spindles	System
Martha Mills	44,450	Double Apron Roth
Deering Milliken	121,500	Double Apron Roth
J. P. Stevens	72,800	Double Apron Casablancas
Clinton Cotton Mills	85,612	Double Apron Casablancas
Crompton Highlands Mills	10,300	Double Apron Roth

Dixon

Engineered devices for weighting and guiding top rolls since 1876

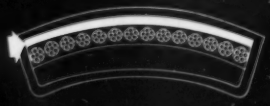
Want to control the ***V****ariables on your* ***V****ariable-speed drives?*

Control Slippage with Goodyear Variable-Speed Belts that have a specially compounded, abrasion-resistant cover to take a strong, uniform grip on both sides of the sheave.



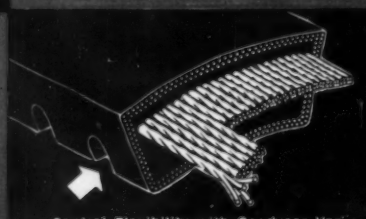
Control "Dishing" with Goodyear Variable-Speed Belts that incorporate a special, fiber-reinforced, synthetic-rubber compression section to resist side pressures – protect from fatigue.

Control Shrinkage-Stretching with Goodyear Variable-Speed Belts that are sinewed by exclusive Triple-Tempered (3-T) Cord for true dimensional stability in storage and in use.

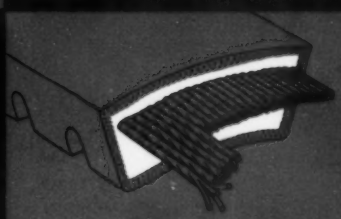


Control Uneven Pull with Goodyear Variable-Speed Belts that feature a special, "cool-running" tension section to assure balance of yield – equalizing pull on either side of the belt.

Control Chafing Action with Goodyear Variable-Speed Belts that have a special "floating gum" insulating section to transfer all the load to the load-carrying cords.



Control Flexibility with Goodyear Variable-Speed Belts that are notched with absolute uniformity to bend easily over small pulleys without sacrifice of rigidity or strength.



Control Uniformity of Cross Section with Goodyear Variable-Speed Belts that are precision-molded for uniformity throughout their full length.

Variable-speed drives are tough enough—without having to contend with variations in the performance of the belts you use.

That's why so many design men insist on the *controlled* quality construction of Variable-Speed Belts by Goodyear. They know these belts are an invariable cure for the headaches so common to variable-speed-drive users.

For the belts that assure you maximum, trouble-free horsepower hours at minimum cost – in a complete range of 371 sizes to meet every need—check with the G.T.M.—Goodyear Technical Man—through your Goodyear Distributor. Or write Goodyear, Industrial Products Division, Lincoln 2, Nebraska, or Akron 16, Ohio.

IT'S SMART TO DO BUSINESS with your Goodyear Distributor. He can give you fast, dependable service on Hose, V-Belts, Flat Belts and many other industrial rubber and nonrubber supplies. Look for him in the Yellow Pages under "Rubber Goods" or "Rubber Products."

VARIABLE-SPEED
BELTS
BY

GOODYEAR

THE GREATEST NAME IN RUBBER

B. I. Cotton Mills, Div. of Burlington Industries, is planning a modernization program at its Middleburg plant in Batesburg, S. C., and its Lexington plant in Lexington, S. C. An addition will be built at the Middleburg plant, and operations will be realigned. Operations will also be realigned at the Lexington plant.

Beaverbrook Mills, Dracut, Mass., has stopped production of blankets.

Brittany Dyeing & Printing Corp., New Bedford, Mass., has started operations in the former plant of Normandy Print Works in New Bedford.

Burlington Mills Hosiery Co. of Canada Ltd., Lachine, Que., has bought the 35,000-sq.-ft. plant formerly occupied by Bates Mfg. Co., Waterloo, Que. Burlington expects to expand production of women's seamless hosiery.

Caltex Dyeing & Finishing Co., Lodi, N. J., is a newly formed company. It will occupy the plant of the former Lodi Piece Dye Works.

Clover Mills, Inc., Douglasville, Ga., has leased the plant and warehouses formerly occupied by Glendale Mills, Inc., Glendale, S. C., and will consolidate its operations in the new location.

Com-Fo Hosiery Mills, Henderson, N. C., is a newly formed company. The new company has started building a 2,800-sq.-ft. plant.

Custom Bedding Co., Little Rock, Ark., will establish a branch plant at Tupelo, Miss. It will manufacture padding for Scarsdale Quilting Mills, Inc., Tupelo.

Dan River Mills, Inc., Danville, Va., is building a new research and chemical-manufacturing building scheduled for completion by October 1. The steel-frame building will include two floors and a mezzanine with about 52,000 sq. ft. of floor space. One portion of the building will have cement-masonry unit walls with brick facing, and a second portion will have prefabricated aluminum side walls. The new facilities represent an investment of about $450,000.

Diane Hosiery Mills, Inc., Raleigh, N. C., is a newly formed company. Incorporators are Carlton B. Boland, J. R. Lindley, and C. C. Cates, Jr., all of Burlington, N. C.

Eastland Woolen Mills, Inc., Corinna, Me., has completed its $3-million addition.

Erwin Mills, Inc., Durham, N. C., is closing its plant at Falls of Neuse, N. C. The plant employs 118 people and has 178 looms. Most of the machinery will be moved to the company's plant at Cooleemee, N. C.

Gibbs Underwear Co., Philadelphia, Pa., is building a 48,000-sq.-ft. plant on a 40-acre site in Lincolnton, N. C.

Greenville Finishing Corp., Greenville, R. I., will open a second plant in Taunton, Mass. The site was formerly occupied by the Taunton, Mass., division of Consolidated Textile Co., New York, N. Y.

J. & S. Hosiery Mills, Inc., Hickory, N. C., is a newly incorporated firm chartered by Claude R. Setzer of Hickory, Ralph Johnson of Richmond, and Geter P. Johnson of Newland, N. C.

Juno Knitting Mills, Brooklyn, N. Y., has consolidated mill operations into one plant. Formerly four buildings were used. The mill has 20,000 sq. ft. of floor space. The company has bought one new knitting machine and expects to add 35 more people to the staff at peak production.

The Kendall Co., Boston, Mass., has announced that Bauer & Black products and the complete line of Bike elastic goods will be produced exclusively in the company's Seneca, S. C., plant. Elastic goods are now being made in the Seneca plant; but there are two other existing plants, one in Rockford, Ill., and the other in South Bend, Ind.

Kerr Bleaching & Finishing Works, Concord, N. C., is building a 50,000-sq.-ft. warehouse at a cost of about $200,000. The warehouse will be completed about August 1.

Lebanon Woolen Mills, Lebanon, Tenn., is planning an 18,000-sq.-ft. addition to its plant.

Ludlow Mfg. & Sales Co., Ludlow, Mass., has placed its plant and property in Allentown, Pa., on the market for sale or lease.

Medford Mills, Burlington, N. J., has bought a tract of 23.7 acres for expanding operations.

Palmetto Yarn Mills, Inc., Pageland, S. C., has been bought by a new corporation, Chesterfield Yarn Mills, Inc. Joe E. Neisler and members of his family, Kings Mountain, N. C., are major stockholders.

Pisgah Mills, Inc., Brevard, N. C., is spending more than $50,000 on carding improvements.

Premier Thread Co., Pawtucket, R. I., is considering moving its operations to Bristol, R. I.

Rockville Processing Co., Rockville, Conn., has formed a new company, Costa Mesa Fabrics, Inc., Costa Mesa, Calif. The new company will knit, finish, and process cotton in a new 24,000-sq.-ft. building.

Slane Hosiery Mills, Inc., High Point, N. C., is building an addition of 8,700 sq. ft. to its main plant at a cost of $70,000. Most of the new floor space will be used by the shipping department according to tentative plans, freeing space for installation of new finishing equipment.

Susan Carol Hosiery Mills & Distributors, Gibsonville, N. C., has applied for a charter of incorporation. Incorporators were listed as Garland E. Bennett of Charlotte, B. F. Wood of Graham, and Homard W. Curl of Siler City, N. C.

CALENDAR

May

Alabama Textile Operating Executives, spring general meeting on slashing and weaving problems, Thach Auditorium, Auburn, Ala., May 2

Maintenance and Plant Engineering annual conference, Edgewater Beach Hotel, Chicago, Ill., May 4 & 5

Knitting Arts Exhibition, Atlantic City Auditorium, Atlantic City, N. J., May 4 to 8

National Association of Hosiery Manufacturers, annual meeting, Claridge Hotel, Atlantic City, N. J., May 4

Underwear Institute, annual meeting, Hotel Traymore, Atlantic City, N. J., May 5

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., May 6

Cotton Research Clinic, sponsored by the National Cotton Council, Grove Park Inn, Asheville, N. C., May 12 to 14

Tufted Textile Manufacturers Association, annual convention, Hollywood Beach Hotel, Hollywood Beach, Fla., May 13 to 16

National Association of Wool Manufacturers, annual meeting, Waldorf-Astoria Hotel, New York, N. Y., May 14

National Association of Woolen & Worsted Overseers, semiannual convention, Hotel Madison, Boston, Mass., May 15 & 16

Cotton Manufacturers Association of Georgia, annual cotton-buyers conferences, Dinkler-Plaza Hotel, Atlanta, Ga., May 20 to 22

American Society for Quality Control, annual convention, Cleveland Auditorium, Cleveland, Ohio, May 25 to 27

South Carolina Textile Manufacturers Association, annual meeting, The Cloister, Sea Island, Ga., May 28 to 30

June

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., June 3

Material Handling Institute's Exposition, Public Auditorium, Cleveland, Ohio, June 9 to 12

Southern Textile Association, annual convention, Ocean Forest Hotel, Myrtle Beach, S. C., June 18 to 20

July

1959 Gordon Research Conference on Textiles, Colby Junior College, New London, N. H., July 13 to 17

September

Fiber Society, Inc., fall meeting, Princeton, N. J., Sept. 11 & 12

3rd International Textile Exposition, Milan, Italy, Sept. 12 to 21

AATCC, South-Central Section, Hotel Patten, Chattanooga, Tenn., Sept. 19

AATCC, Piedmont Section, Barringer Hotel, Charlotte, N. C., Sept. 25 & 26

October

Textile Quality Control Association, fall meeting, Grove Park Inn, Asheville, N. C., Oct. 1 & 2

Textile Operating Executives of Georgia, fall meeting (slashing and weaving), Hightower Textile Building, Georgia Institute of Technology, Atlanta, Ga., Oct. 3

Chemical-Finishing Conference, sponsored by the National Cotton Council, Mayflower Hotel, Washington, D. C., Oct. 7

N. C. Textile Manufacturers Association, annual convention, Carolina Hotel, Pinehurst, N. C., Oct. 8 & 9

AATCC, annual convention, Sheraton-Park and Shoreham Hotels, Washington, D. C., Oct. 8 to 10

North Carolina Textile Manufacturers Association, annual meeting, Carolina Hotel, Pinehurst, N. C., Oct. 8 & 9

Alabama Textile Operating Executives, fall general meeting on carding and spinning problems, Langdon Hall, Auburn, Ala., Oct. 10

Textile Education Foundation, Inc., annual meeting, A. French Textile School, Georgia Institute of Technology, Atlanta, Ga., Oct. 17

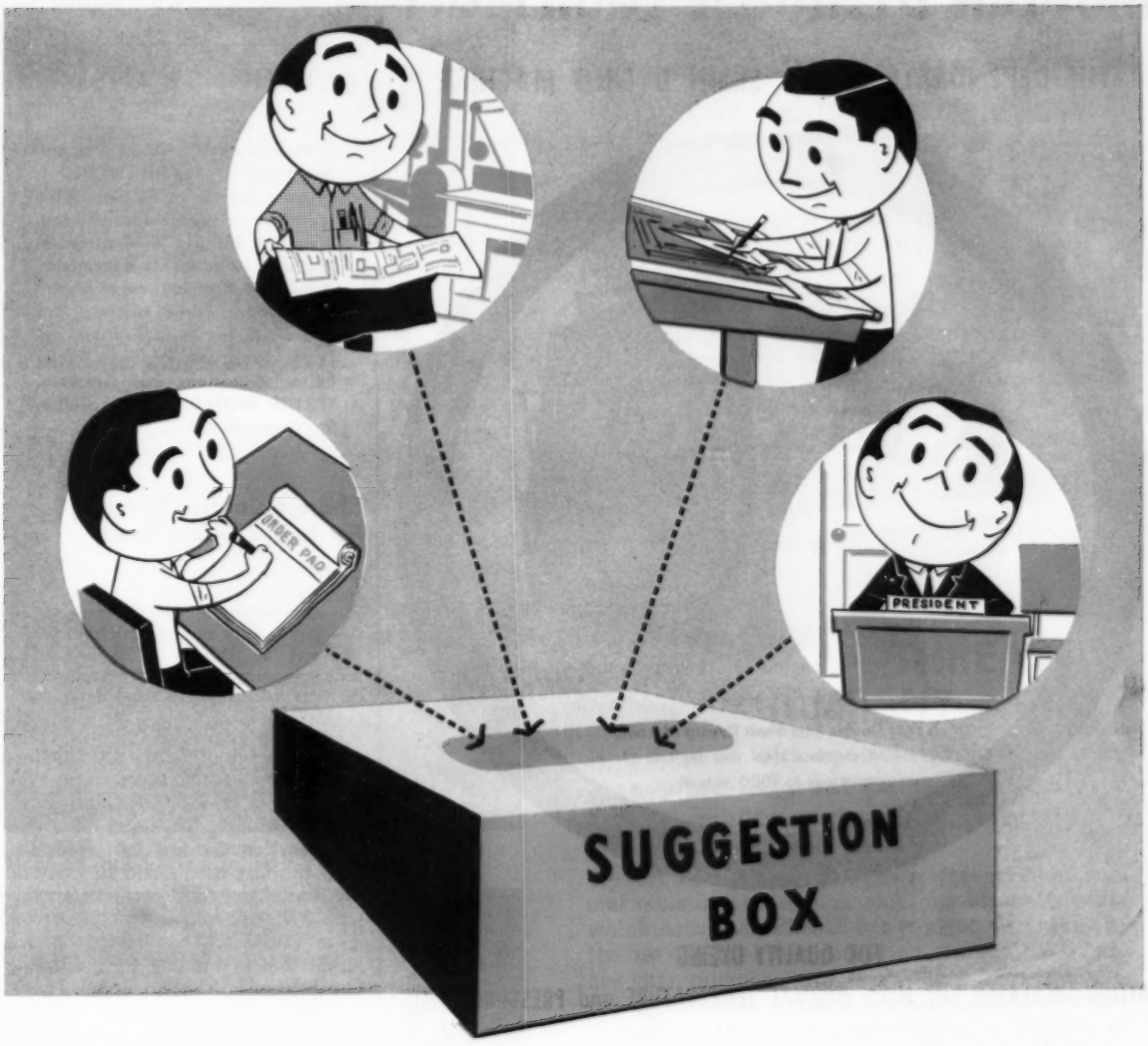
1960

May

American Textile Machinery Exhibition, Atlantic City, N. J., May 23 to 27

October

21st Southern Textile Exposition, Textile Hall, Greenville, S. C., Oct. 3 to 7



Your idea for a new machine, the improvement of an existing machine, or the increased efficiency of an operation may be completely ready for development, or only partially developed. It may come from production as well as R&D, from sales as well as engineering, from purchasing as well as management.

At Butterworth, you can get an objective evaluation of your idea — without obligation.

Butterworth offers a background of 139 years of machine-building experience — in textile finishing, synthetic fiber processing, plastics, special machines for processing industries, plus specialized knowledge and experience in electronics, atomic energy, and missile development.

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MODERN DYEHOUSE EQUIPMENT

THE DEPENDABLE KWG SKEIN DYEING MACHINE

KWG Double Reel Skein Dyeing Machine —all stainless steel unit built in capacities to 1000 pounds.

FOR QUALITY DYEING
WITHIN INCREASED BUT MORE NORMAL TEMPERATURE and PRESSURE LIMITS

Perfection in dyeing—for natural and the new synthetic fibers—is yours with KWG Skein Dyeing machines. Rugged construction . . . improved 'Ferrous-Wheel' performance . . . give you the penetration and evenness of color—the permanence of tone—for that extra measure of sales appeal—without concern for costly high-temperature, high-pressure methods. Dual-operations possible including scouring, dyeing and shrink-proofing, or scouring, bottom bleaching and dyeing of pastel shades.

You can point the way to extra sales . . . extra profits . . . today by writing Klauder Weldon Giles. A KWG representative will be glad to survey your needs. If necessary, he'll design special equipment to your specifications. There's no obligation.

Klauder Weldon Giles MACHINE COMPANY

ADAMS AVENUE & LEIPER STREET • PHILADELPHIA 24, PA.

QUESTIONS & ANSWERS

Do you need help on a technical problem? TEXTILE WORLD is at your service in helping solve problems in yarn manufacturing, weaving, knitting, dyeing, finishing, and other textile operations. A large staff of mill men, consultants, and other experts are available for authoritative answers. Send your problem to the Editor, Questions and Answers, TEXTILE WORLD, 201 E. Coffee St., Greenville, S. C.

Change Construction For Better Orlon Fleece

Technical Editor:

We run a heavy singles Orlon yarn with a cotton tie-in double-plush construction on a cotton back to make an Orlon fleece. We nap the fabric on a 20-roll double-acting napper. How can we improve the fleece to make the pile stand more erect? (1435)

Changing your fabric construction might improve the fleece. Use two finer ends of yarn for your lay-in yarn. Use two backing burrs, and offset the burrs so that the first burr feeds behind the first needle and in front of the second and third needles. Set the second backing burr so that the second lay-in yarn feeds behind the second needle and in front of the third and fourth needles.

Shearing the fabric after napping will remove some of the longer fibers and improve the appearance of your fleece.

Fuzzy Yarn and Bad Build Cause Trouble at Spooling

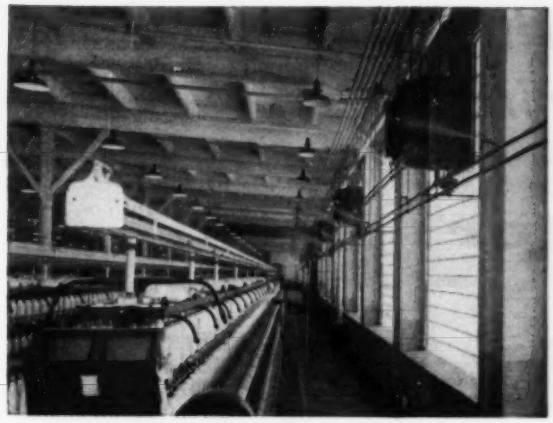
Technical Editor:

We recently installed some new spoolers and put dual-apron drafting on our spinning frames. Immediately, we were troubled with fuzzy yarn and sloughing off at the spooler. Can you tell us what causes this trouble? (1430)

Fuzzy yarn can be caused by a number of things. Worn rings, rough thread guides, and out-of-plumb spindles are among the most common.

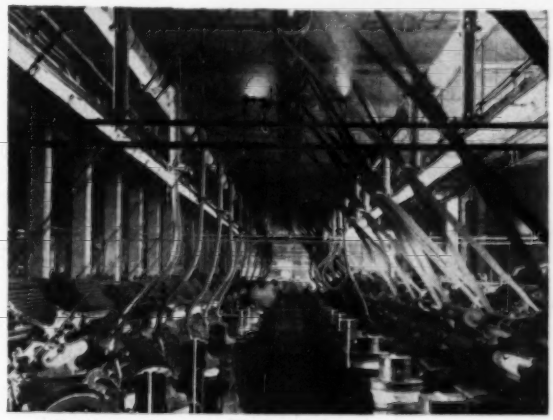
As to sloughing off, apparently your bobbin build isn't right for your spooler. This condition can be helped by taking all backlash out of the upright shaft and adjusting the lag gear.

If these adjustments don't clear up

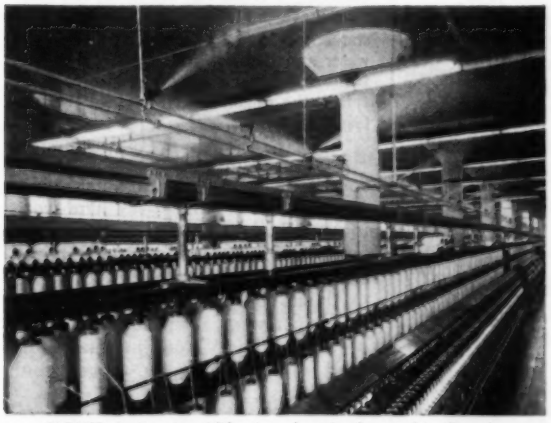


WILLIMANTIC, CONN. — Humidification with cooling was the choice in this mill.

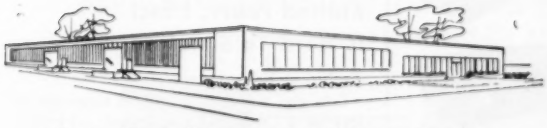
DALTON, GA. — Amco Humidification with cooling was preferred for spinning operation at Dalton, too.



NEWNAN, GA. — Amco Humidification alone was selected for carding room at Newnan.



CLOVER, S. C. — Humidification alone is also used in the spinning room here.



Cleveland-Rowan Plant of American Moistening Company. This modern plant is located at Cleveland, N. C. for the fabrication of duct work and sheet metal products.

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and
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A 65-year old association which has resulted in great gains in product quality and productivity

Correct yarn regain through maintenance of normal moisture content is only one of the benefits which American Thread has enjoyed as a result of the use of Amco humidification. Among the others are yarn numbers kept more even; increased output due to closer machine tolerances and less static electricity; improved product quality because of fewer thread imperfections, reduced dust and fly, more operator comfort.

Amco, of course, designs *all* types of systems — straight humidification; humidification in combination with ductless evaporative cooling, as used by American Thread; dry duct systems; and central station air conditioning.

For expert advice, backed by many years of textile air conditioning experience, call on Amco. An Amco engineer will be glad to suggest a solution to any air conditioning problem you may have. There is absolutely no obligation.

AMCO

SINCE 1888

AIR CONDITIONING EQUIPMENT

AMERICAN MOISTENING COMPANY • CLEVELAND, NORTH CAROLINA

BRANCHES: ATLANTA, GA. • PROVIDENCE, R. I. • TORONTO, CANADA

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Color fastness of Textiles in Industrial Laundering

A.A.T.C.C. Test Method 87-1958

Atlas-Accelerotor®

Excellent correlation and reproducibility has been demonstrated with this machine

One of the principal causes of loss of color in industrial laundering is the abrasive action produced by procedure common in laundering work clothing.

The ATLAS ACCELEROTOR® produces abrasive effects closely comparable to those developed in industrial laundering and is the machine incorporated in the A.A.T.C.C. color fastness test.

The Accelerotor is also used for dry abrasion evaluation of woven, non-woven, knitted and coated fabrics. The combined action of flexing, tumbling and random motion to produce abrasion of fiber against fiber as well as fiber against various abradent materials is produced in the Accelerotor. Evaluations can be made of loss of color, weight, tensile strength and changes in dimension and hand.

Test completed in three to six minutes. Permits alternate tests of washing or dry cleaning combined with dry abrasion.

Write for technical bulletin on the Accelerotor and A.A.T.C.C. Test Method 87-1958.

Weather-Ometer® $2755 up.

Fade-Ometer® $1350 up. Complete with supplies.

Launder-Ometer® $875 complete with accessories and supplies.

Random Tumble Pilling Tester $485 to $890.

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ATLAS ELECTRIC DEVICES CO., 4114 N. Ravenswood Ave., Chicago 13, Illinois, U.S.A.

Sales representatives in principal cities throughout the world

the trouble, you may find it necessary to replace plain studs with antifriction studs and install antifriction bearings at the cam, jack, and upright shafts.

Check Wool Blending With Ultraviolet Light

Technical Editor:

Is there any way to check wool blends for fiber distribution by using ultraviolet light? (1437)

Yes. Dye about 1% of your white wool stock with a small amount of fluorescent dye. The dye should not be strong enough to be discernible in the final yarn or to interfere with subsequent dyeing in different shades.

About 1% yellow dye merges easily with the natural color of wool and is not noticeable in the spun yarn before dyeing.

Use a portable ultraviolet light to check each stage of processing from the pickers through weaving. The examination will give you a good idea of fiber distribution in your blend and is very convincing to supervisors and workers who want to blame a bad blend on some other department.

Hard-Twist Spun Yarn Is Best for Butcher's Twine

Technical Editor:

We are having quite a bit of trouble in obtaining a consistent polish on our butcher's twine. The polish consists of potato starch, wax, and a penetrant mixed in cold water and then boiled for 30 mins. The twine is hard-twist roving made with 4.3 tpi. in the singles and 4.7 tpi. in the ply. Can you help us? (1445)

You probably would get a more consistent twine by using hard-twist spun cotton yarn instead of hard-twist roving. Your polishing mixture appears to be in keeping with mixes commonly used for this purpose.

About all we can suggest is that you experiment with different kinds of yarn and vary your polishing formula until you hit on a procedure that works consistently.

Knitted Fabric Effect Is Hard To Simulate

Technical Editor:

Can you simulate a knitted warp rib effect on a C&K 4x1 box loom? (1449)

It is possible to weave a knitted warp rib effect by using resilient or elastic yarn, but we doubt if the result would be worth the trouble.

For more data, circle A-10 on Reader Service Card

NOW!

Southern DURAMOLD Shuttles

For Multiple-Box Looms

Illustration of C. & K. W-3 Loom courtesy of Crompton & Knowles Corporation.

Last 3 to 4 Times As Long As Wood

Rugged DURAMOLD shuttles, the most versatile and durable molded plastic shuttles on the market, have a phenomenal performance record in numerous large scale applications. NOW THEY ARE AVAILABLE FOR C. & K. MULTIPLE-BOX LOOMS.

Most important advantages of DURAMOLD shuttles in multiple-box weaving are:

1. **The weight of all DURAMOLD shuttles of given specifications is always exactly the same.**
2. **The additional weight of DURAMOLD shuttles is particularly beneficial in these heavier, wider looms.**
3. **The shuttle width can be closely matched and held.**
4. **DURAMOLD shuttles are completely unaffected by atmospheric conditions—humidity will not cause any size changes, swelling or contracting.**
5. **Molded from remarkably strong, grainless Westinghouse Micarta, there is no splitting or splintering, and premature failures are practically eliminated.**

Only Southern's exclusive molding and manufacturing methods permit greater versatility of construction to meet your EXACT requirements, such as tip location, eye location, chamber length, shuttle width, etc.

REDUCE YOUR SHUTTLE COSTS NOW BY USING SOUTHERN DURAMOLD SHUTTLES
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TENSION TROUBLES

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Automatic

TENSION CONTROL

It's the most ***ACCURATE, DEPENDABLE*** and ***SIMPLEST*** way to ***BEAT TENSION PROBLEMS...***

WHERE IS YOUR TENSION CONTROL TROUBLE?

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Whatever your TENSION-CONTROL problem may be — wherever winding, unwinding or processing operations of any type are performed — the MOUNT HOPE Automatic TENSION CONTROL — will positively operate any type control mechanism to correct your troubles.

IT IS SENSITIVE, ACCURATE AND FAST ACTING — scientifically designed and engineered to provide the split-second tension characteristics that your product may require.

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City.....Zone.....State.....

Misplaced Filling Yarn Is Caused by Mispicks

Technical Editor:

We frequently have trouble with misplaced filling in our weave room. Can you tell me what causes misplaced filling? (1439)

The most common type of misplaced filling yarn is a mispick. A mispick is an end of filling yarn placed in the wrong shed of the warp and is usually caused when the yarn breaks and the weaver restarts the loom without matching the filling. A somewhat similar defect is caused when an end of filling yarn is missing from the fabric and is generally known as a broken pick. Both mispicks and broken picks may extend from selvage to selvage, or they may be only a few inches long.

Mispicks are also made when the shuttle is thrown from the warp shed, is trapped by the shuttle guard and deflector, and enters the opposite shuttle box with the loom still in operation. In this instance, a trailing end of yarn is left outside the shed, and a mispick is made in the cloth. These defects can be caused by several things. Among the causes are:

1. Picker not parallel to the lay
2. Lay end or shuttle race not aligned properly
3. Harnesses not set or timed correctly
4. Warp shed too small
5. Broken warp end or foreign matter obstructing the shed
6. Shuttle worn out
7. Crooked picker stick
8. Picking motion not timed correctly

OUR COVER

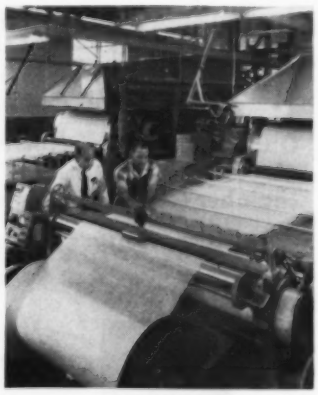

Photo by Coxe Studio, Greenville, S. C. See Glenwood Mills Modernizes, page 52.

have you tried the new Whitin

KRYTON* RING

We could say a great deal about the high speeds, the small number of ends down, the long traveler life, and the other wonderful benefits of the Whitin Kryton Ring. We suggest, however, that you can prove all of them to your own satisfaction by simply installing a frame of sample rings. Why not order yours today?

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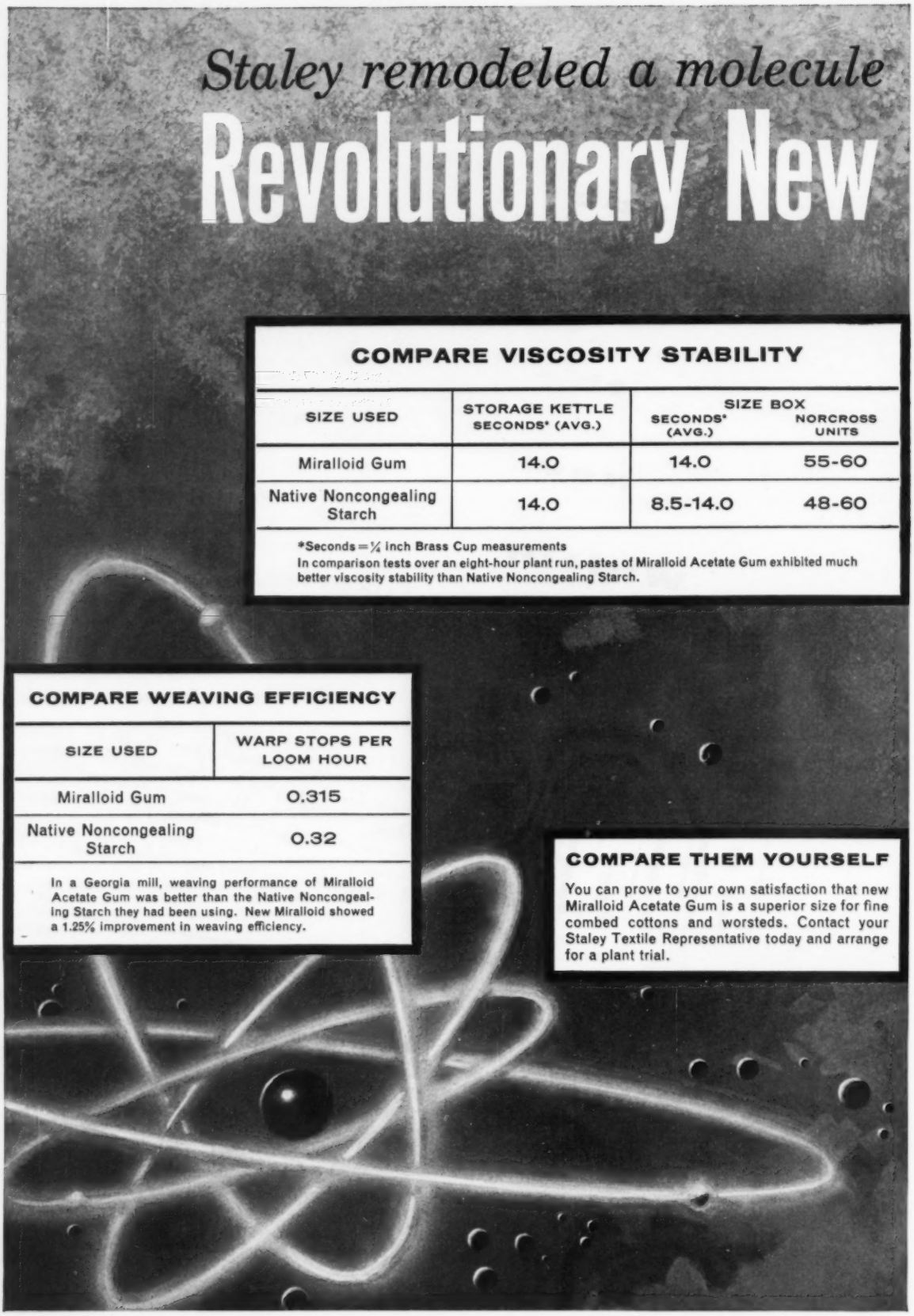

COMPARE VISCOSITY STABILITY

SIZE USED	STORAGE KETTLE SECONDS* (AVG.)	SIZE BOX SECONDS* (AVG.)	SIZE BOX NORCROSS UNITS
Miralloid Gum	14.0	14.0	55-60
Native Noncongealing Starch	14.0	8.5-14.0	48-60

*Seconds = ¼ inch Brass Cup measurements

In comparison tests over an eight-hour plant run, pastes of Miralloid Acetate Gum exhibited much better viscosity stability than Native Noncongealing Starch.

COMPARE WEAVING EFFICIENCY

SIZE USED	WARP STOPS PER LOOM HOUR
Miralloid Gum	0.315
Native Noncongealing Starch	0.32

In a Georgia mill, weaving performance of Miralloid Acetate Gum was better than the Native Noncongealing Starch they had been using. New Miralloid showed a 1.25% improvement in weaving efficiency.

COMPARE THEM YOURSELF

You can prove to your own satisfaction that new Miralloid Acetate Gum is a superior size for fine combed cottons and worsteds. Contact your Staley Textile Representative today and arrange for a plant trial.

to create a

Development in Sizings

—for Worsteds and Fine Combed Cottons!

New Basic Chemical Discovery . . . noncongealing Miralloid Acetate Gum out-performs all native starches! Sets new standards in uniformity! Makes possible controlled viscosity with greater resistance to break-down . . . reduced set-back and softer gels. Increases weaving efficiency up to 1.5% on cotton and as much as 3% on worsteds—yet actually costs you less!

Truly, here's a great new advance in sizing for worsteds and fine combed cottons . . . new Miralloid Acetate Gum, a unique thick-boiling acetylated starch.

Made possible only by an exclusive new chemical process, discovered and developed by A. E. Staley Mfg. Co., new Miralloid Gum costs less than native noncongealing starches, yet is definitely superior in many important ways.

With new Miralloid Gum there's never any guesswork. For it produces a size of stable viscosity with uniform and controlled moisture content. And thanks to new Miralloid's superior film-forming properties, weaving efficiency, too, is substantially improved. Thin spots, fuzz balls, matting on drop wires, and similar loom stoppers are greatly reduced, with corresponding reduction in costly down-time.

And with new Miralloid, faster slasher speeds are possible. For example, in sizing fine combed cotton, slashers can be operated as high as 150 yards a minute with minimum ends out of lease. Worsteds and worsted/synthetic blended yarns, sized with new Miralloid, have a 1% to 3% higher weaving efficiency—at 33⅓% less kettle cost than yarns sized with blends of starch and higher priced acrylic emulsion.

Particularly important is new Miralloid Gum's outstanding uniformity, both in physical properties and performance. From bag to bag, carload to carload, you can rely on Miralloid Gum to give you the same fine results every time.

Get all the facts on new Miralloid Gum today. See how it will fit into your operation. See your Staley Textile Representative or write: A. E. Staley Mfg. Co., Decatur, Ill.

Compare New Miralloid Gum with the Size You're Now Using.
Double-check These Money-saving, Profit-making Advantages!

1. Constant supply at a stable price.
2. Uniform and controlled moisture content.
3. Noncongealing at normal concentrations.
4. Better viscosity stability.
5. Greater resistance to viscosity break-down.
6. Set-back characteristics are markedly reduced.
7. Prepares quicker—requires 25% less cooking time prior to homogenization.
8. Minimum "scum" formation in size box even when slasher is stopped 1 or 2 minutes.
9. Provides excellent cooking kettle drainage.
10. Costs less.
11. Improves weaving efficiency.

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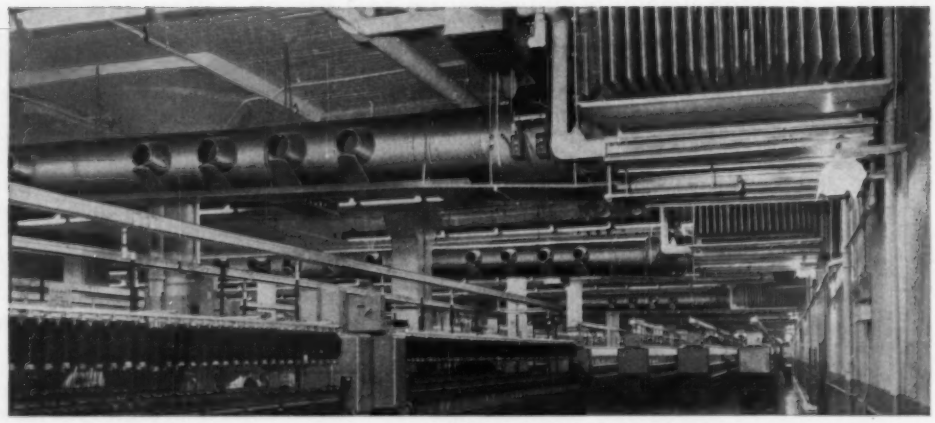
DAN RIVER'S
1st CHOICE
5 TIMES

Says BASIL D. BROWDER
Executive Vice-President
Dan River Mills, Danville, Va.



BAHNSON HUMIDUCTS

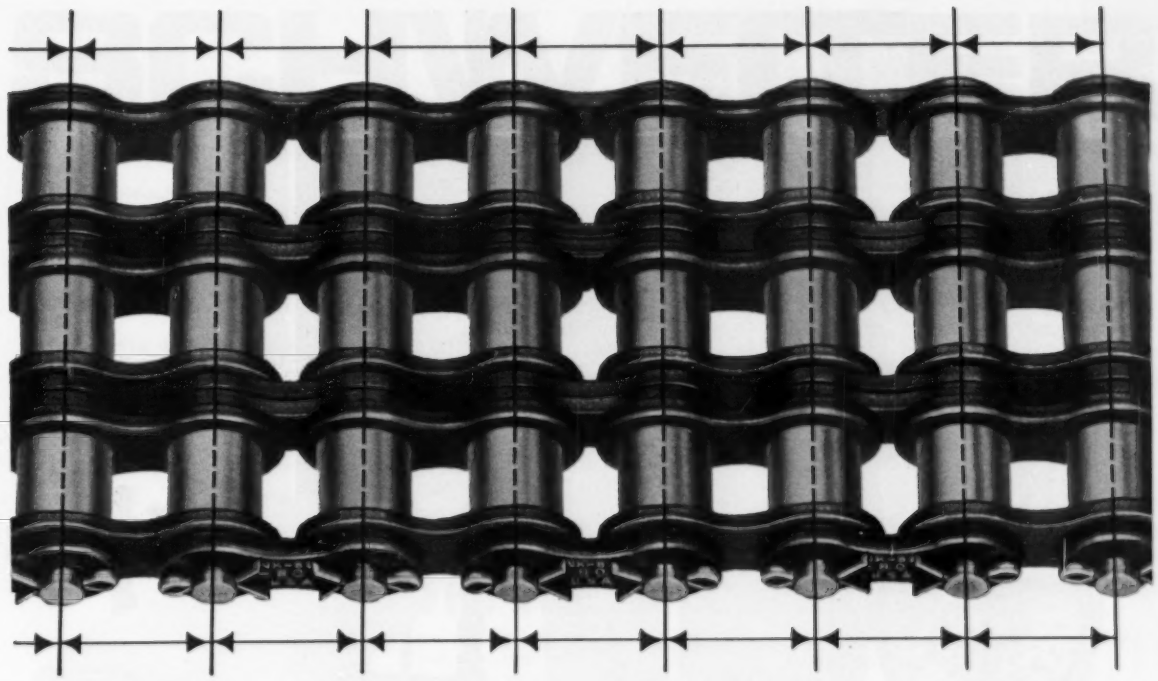
WITH REFRIGERATION AND EASY-FLO FILTERS PROVIDE FLEXIBLE UNIT-SYSTEM AIR CONDITIONING AT LOW COST

Free Illustrated Bulletins
For full details write for Humiduct Bulletin 4A, Easy-Flo Bulletin 27A.

"Five times in our decade of modernization," says Mr. Basil D. Browder, "we chose Bahnson Humiducts for Spinning and Weave Rooms at Dan River. Humiduct's versatile unit design gives us control flexibility for production requirements . . . Easy-Flo Filters provide clean air, reduce cleaning time . . . overtime maintenance is eliminated with Humiducts. We found that Humiduct's low first cost and efficient operation gave us the most modern and economical air conditioning for our needs."

Bahnson AIR-O-MATION
AIR AT WORK FOR INCREASED PROFITS

THE BAHNSON COMPANY
WINSTON-SALEM, N.C., U.S.A.



Equal length... equal strength

How pre-stressing ensures uniform load distribution of multiple-width LINK-BELT roller chain

Pre-stressing is one of the reasons why Link-Belt multiple-width precision steel roller chains easily handle the grueling loads common on today's drives. It seats and cold works the chain joint parts, assuring equal load distribution across the chain, minimum initial elongation, increased fatigue life.

Pre-stressing is just one of many "extras" that contribute to the *greater dynamic strength* of Link-Belt roller chain. Others include: close heat-treat control, lock-type bushings, shot-peened rollers, pitch-hole preparation. For details see Book 2657.

PRE-STRESSING MACHINE provides the pull that "sets" the parts of Link-Belt multiple-width roller chain. Besides assuring uniform load distribution, pre-stressing eliminates application difficulties on fixed center drives because the chain leaves the factory at precise operational length.

LINK-BELT

THE SYMBOL OF QUALITY — LB — LINK-BELT

ROLLER CHAINS AND SPROCKETS

BOOK 2657 has 154 pages of roller chain data. Contact your nearest Link-Belt office or authorized stock-carrying distributor. (See CHAINS in the yellow pages of your phone book.)

15,077

LINK-BELT COMPANY: Executive Offices, Prudential Plaza, Chicago 1. To Serve Industry There Are Link-Belt Plants, Sales Offices, Stock Carrying Factory Branch Stores and Distributors in All Principal Cities. Export Office, New York 7; Australia, Marrickville (Sydney); Brazil, Sao Paulo; Canada, Scarboro (Toronto 13); South Africa, Springs. Representatives Throughout the World.

Furniture courtesy of John H. Pray & Sons Co., Boston, Mass.

Shifting markets demand versatile looms — weave these, and other fabrics . . . with UNIFIL®

The amazing versatility of a UNIFIL-equipped weave room means you can switch filling from yarn to yarn, and supply package to supply package, in minutes. No more changing in quilling room . . . yarn inventory on quills practically eliminated . . . minimum work load adjustments.

Mills are proving every day that their UNIFIL-equipped looms have unexpected versatility. They are weaving cotton, spun and filament synthetics, textured and novelty yarns, all with high efficiency and improved quality.

UNIFIL can move your mill into new markets, with higher profits, quickly. *The versatile weave room is the* UNIFIL-*equipped weave room.* Your neighbors* have discovered it . . . when will UNIFIL Loom Winders make more dollars for you?

* Amerotron, Berkshire-Hathaway, Burlington, Cannon Mills, Cone Mills, Dover Mill Group, Judson, Laurens, Pansy Weaving Mills, Ponemah Mills, Riegel Textile, Stanwood Mills, J. P. Stevens, United Merchants, Woodside Mills. (A partial list, only.)

23.8.8A

UNIVERSAL WINDING COMPANY

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SCHWEITER

1—individual drive

2—differential gearing for prevention of pattern wind

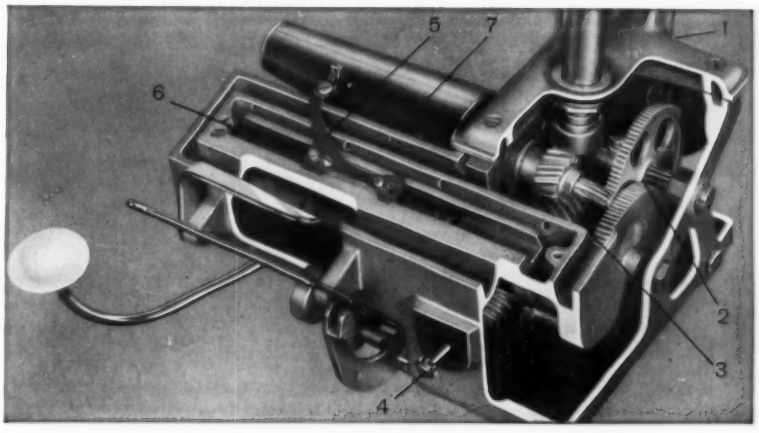
3—gear drive

4—positive drive for waxing device

5—thread guide

6—cam

7—driving drum



The VARIO-CONER Type KM

the new Special Cone Winder for cotton, wool, etc. for winding over-end from cops and spinning bobbins and for unrolling from swifts with automatic stop motion for entanglement in the skein

The VARIO-CONE

on cardboard cones of 9° 15′ conicity and 16° at fully wound diameter. Experts consider the VARIO-CONE to be the finest and best shaped cross wound package of its kind.

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For more data, circle A-19 on Reader Service Card →

Here's how you can demonstrate

these simple tests show improved dispersibility . . .

C

A Fine, uniform particle-size of typical Carbanthrene Vat Dye is shown in this photomicrograph (X20,000). Particles do not tend to lump together.

B Clean results in dyeing are forecast by sedimentation filter test. Typical Carbanthrene Dye passed through Buchner funnel leaves a minimum of residue on filter paper.

C Dilute pigment filter test is toughest of all. Leading mills require vat dye solutions to filter through in one minute. Virtually all of the modern Carbanthrene Dyes pass in less than thirty seconds!

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the superiority of National® CARBANTHRENE® *Vat Dyes!*

practical results prove it!

Packages dyed by pigment impregnation are thoroughly and evenly penetrated. No shade variation, no build-up at package sides and core. There's no waste—the entire package is usable.

Here's where improved dispersibility pays off. Dyeings by continuous pad-stream process are clean, level, free of speckiness.

With modern Carbanthrene Vat Dyes, you produce cleaner, brighter and more level dyeings. Shades are more uniform, formulations readily reproducible time after time. There are fewer rejects and dye yields are often increased.

Here's why:

Unique manufacturing techniques developed by our Research and Engineering Center make Carbanthrene Dyes unexcelled for dispersibility. Filterable insolubles are at a minimum in both reduced and unreduced form. Dyes do not agglomerate in storage or in use.

You will find Carbanthrene Vat Dyes very well suited to your processing requirements, whatever application methods you use. Our representative will gladly arrange a trial in your mill.

NATIONAL ANILINE DIVISION

40 RECTOR STREET, NEW YORK 6, N. Y.

Atlanta Boston Charlotte Chicago Greensboro Los Angeles
Philadelphia Portland, Ore. Providence San Francisco

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3rd international exhibition of the comité européen des constructeurs de matériel textile

e.i.a.t. 59"

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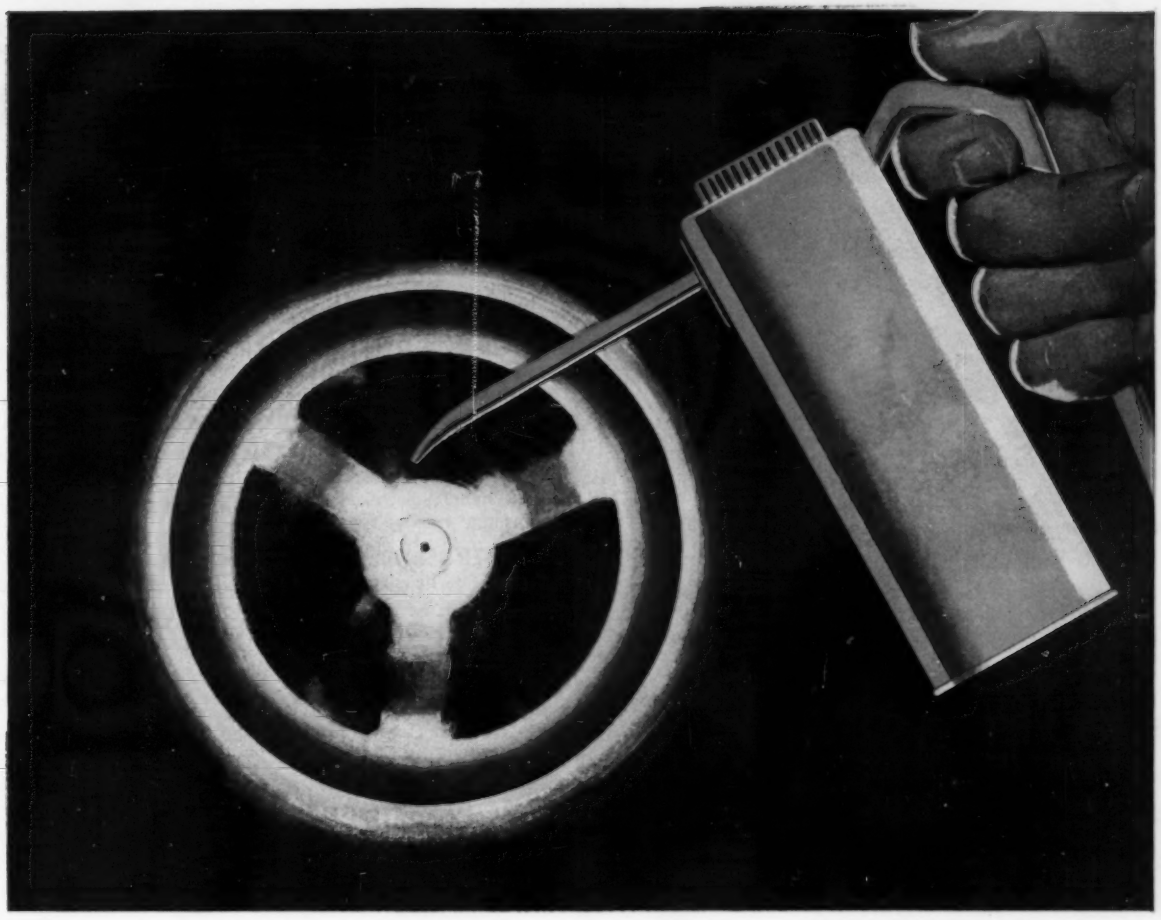
textile machinery

For information please apply to: "E.I.A.T. 59", Via Baracchini 10, Milan, Italy
or Gunther Frankl, 515 Madison Avenue, New York 22, N.Y.

Studio TELL Milano



Setting new standards in textile machine lubrication

NEW SHELL VEXILLA OILS

To assure high compatibility with today's synthetic fabrics, a completely new line of premium-quality textile machine lubricants has been developed—NEW SHELL VEXILLA OILS. These new oils are available in a wide viscosity range to satisfy all operating requirements.

Check these outstanding advantages:

1. Excellent Scourability—New Vexilla® Oils are *easily* and *readily* removed through conventional scouring procedures . . . completely eliminate oil stain problems.

2. High Oxidation Resistance—New Vexilla Oils contain special oxidation inhibitors to prevent increase of viscosity during service and storage. High viscosity index base oils minimize thinning out at high temperatures.

3. Eliminate Bearing Corrosion—New Vexilla Oils contain a newly developed rust inhibitor which keeps bearings *clean* and *free from corrosion.*

4. Non-Gummy—New Vexilla Oils contain no fixed oils such as lard, tallow and sperm oils to cause gumming. In automatic lubricating systems, they will not form harmful metallic soaps when in contact with zinc or copper.

5. Outstanding Wetting Properties—New Vexilla Oils offer superior metal-wetting properties because of the carefully engineered balance of components and polar character.

The Shell Industrial Products Salesman will be glad to show you how to reduce maintenance costs and assist in the selection of the appropriate grades for *your* plant operation. Write Shell Oil Company, 50 West 50th Street, New York 20, New York. In Canada: Shell Oil Company of Canada, Limited, 505 University Avenue, Toronto 2, Ontario.

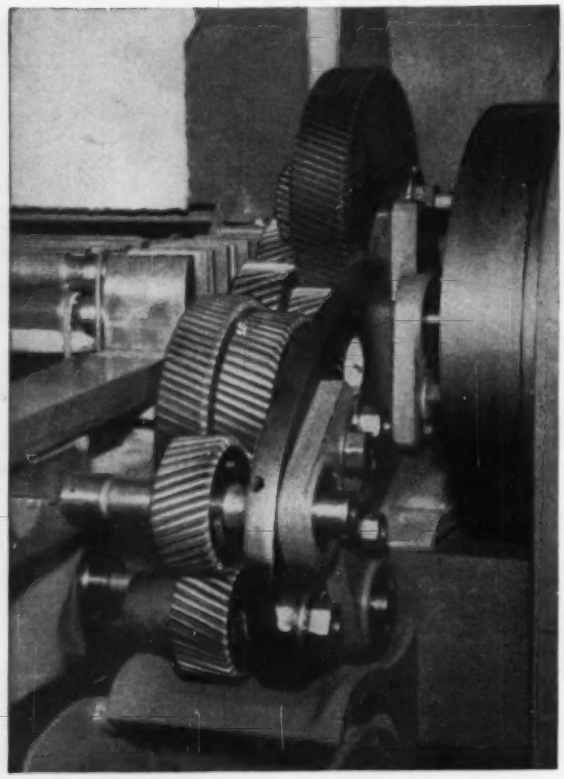
NEW SHELL VEXILLA OILS

. . . quality textile machine lubricants

SHELL

For more data, circle A-21 on Reader Service Card

Put strength, long life, silence into gears, couplings, loom parts with C D F Celoron® plastic



CELORON-TO-CELORON GEARS in drawing rolls made by Ideal Industries, Inc., Bessemer City, N. C. These are helical-cut gears—the toughest to machine, requiring the toughest material. Celoron is it. Other Celoron parts for this application are shown below, top right.

WORK MIRACLES IN TEXTILE MACHINERY—with this amazing golden plastic material! Celoron gears help eliminate noise, reduce wear on mating metal gears; and even the roughest-used helicals last . . . and last . . . and last.

HIGH MECHANICAL STRENGTH. Typical Celoron strengths: tensile, 6,500 psi; flexural, 10,000 psi; compressive, 25,000 psi; shear, 8,500 psi. Dimensionally stable and readily machined, Celoron fills the bill where costly metal parts fail.

ELECTRICAL INSULATION VALUE. Celoron is a non-conductor with high electrical insulation value. It makes ideal mechanical-electrical parts. Celoron couplings effectively insulate motors from driven machinery.

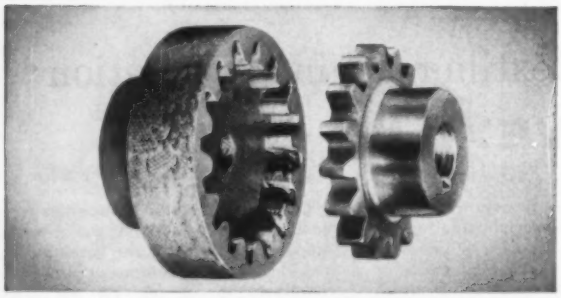
BETTER SERVICE FOR THE SOUTH. Besides having sales engineers in all principal cities, C-D-F maintains a specialized plant-warehouse stocking Celoron parts and Diamond Fibre receptacles for the Southern textile industries at 834 Hayne St., Spartanburg, S. C. Your Celoron gear blank, coupling, or loom part will reach you fast from this wide-awake distribution center.

Keep in close touch with *your* C-D-F sales engineer—a good man to know!

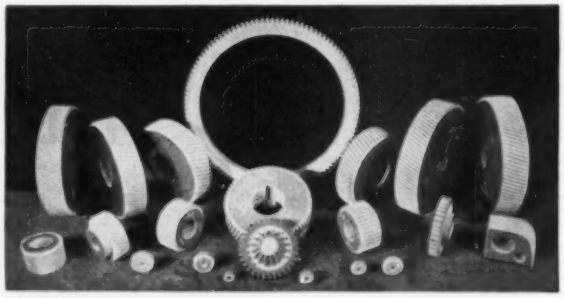
CONTINENTAL-DIAMOND FIBRE

A SUBSIDIARY OF THE Budd COMPANY • NEWARK 55, DEL.

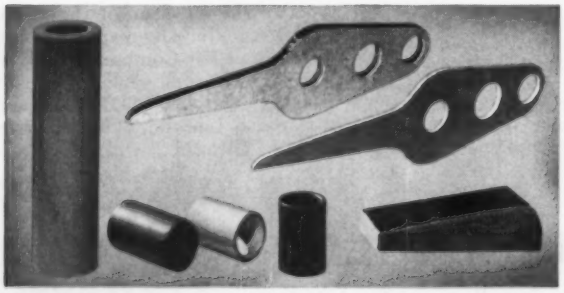
In Canada: 46 Hollinger Road, Toronto 16, Ont.



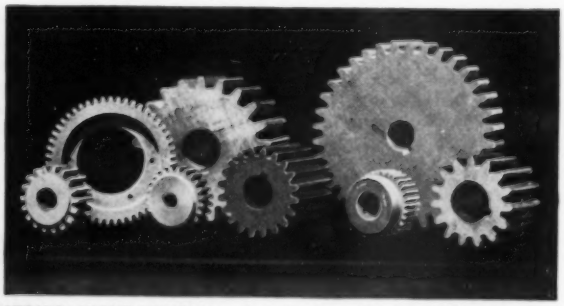
LOW-COST, EASILY-ASSEMBLED C-D-F Celoron flexible coupling transmits power smoothly, efficiently, silently . . . needs no lubrication, works on vertical or horizontal shafts.



PRECISELY MACHINED KEYWAYS help keep these Celoron parts silent and strong in the Ideal drawing rolls illustrated in top photograph. Note wide range of sizes and shapes.



YEARS OF SERVICE, freedom from maintenance, resistance to moisture—that's what these C-D-F parallel plugs, knife guides, binder bushings give the mill operator.



STRONG, SILENT CELORON makes both drive and driven gears. Metal gears don't develop excess play, last longer when they mate with Celoron. Many applications are 100% Celoron-geared.

THE NEED: Cones for stretch and non-stretch bulk yarn.

Bulk or stretch yarns presented the textile industry with new packaging and production problems. A new type cone was required for packaging these processed yarns . . . a cone with a surface which would improve delivery and yarn transfer and with suitable colored tips to withstand special coning oils.

Sonoco technical and production "know-how" solved these problems fast. Special cone papers, and the application of Sonoco's previously developed cone tapers and surfaces — plus proper coatings for colored tips, are being used in the correct combinations to meet each mill's particular requirements.

Only Sonoco, with its modern research and production facilities could solve these problems with economical and efficient carriers. It is typical of countless cases where Sonoco leadership — based on 60 years' experience — has benefited the industry. You can depend on Sonoco!

sonoco

Our 60th year
1899 - 1959

SONOCO
Products for Textiles
SONOCO PRODUCTS COMPANY

See us at
Booths 507-508
Knitting Arts Exhibition
May 4-8, 1959

Main Office—Hartsville, S. C. • Mystic, Conn. • Akron, Ind. • Lowell, Mass. • Phillipsburg, N. J. • Longview, Texas • Philadelphia, Pa. • La Puanta, Cal. • Atlanta, Ga. • Granby, Quebec • Brantford, Ontario • Mexico, D. F.

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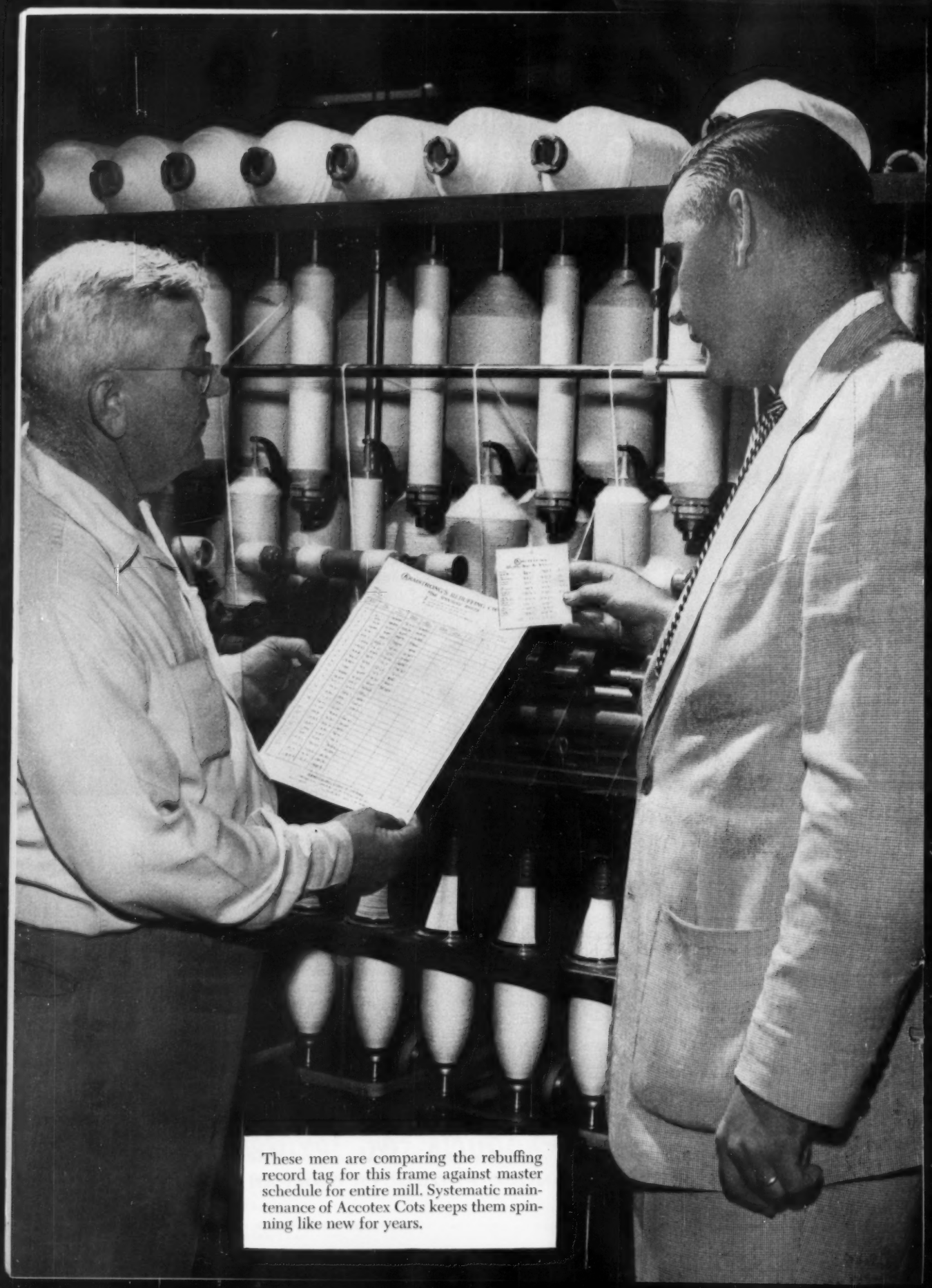


These men are comparing the rebuffing record tag for this frame against master schedule for entire mill. Systematic maintenance of Accotex Cots keeps them spinning like new for years.

Get maximum production of high-quality yarn . . . for years . . . with Armstrong Accotex Cots

The right spinning cot can make an important difference in helping you get the most out of your high-draft frames, both in terms of yarn quality and quantity.

That's why it pays dividends to select these cots carefully, to maintain them systematically . . . and to evaluate their performance regularly.

Many mills have found that they get the optimum combination of high yarn quality, trouble-free performance, and long service life by standardizing on Armstrong Accotex Cots. One big reason for this is that the broad Accotex line includes roll covers which are engineered to combat almost any spinning problem.

This means that no matter what fiber or blend you're spinning . . . no matter what type of equipment you're using . . . there's an Accotex Cot that's right . . . and proved right . . . for the job.

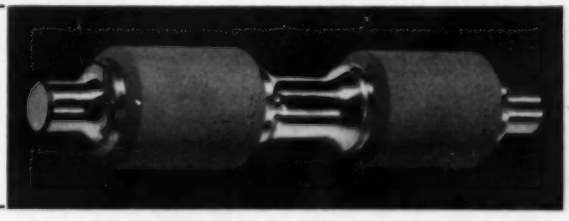
Accotex Cots are durable, too. Their tough synthetic rubber compounds resist "hollowing out" or grooving and are not affected by oils, dyes, or yarn-treating chemicals. In many cases, Accotex Cots give up to a year of three-shift service before they need to be rebuffed.

Because spinning cots are so important to yarn quality—and quantity—many mills find that a systematic cot maintenance program is well worthwhile. A regular rebuffing schedule can add years of like-new performance to roll covering life.

Your Armstrong man will be glad to help you select the right Accotex Cots for best performance in your mill. And he'll work with you to establish a regular schedule of cot maintenance. He'll also supply tags to record rebuffing schedules for individual frames as well as a master rebuffing chart for all the frames in your mill.

Ask your Armstrong representative about this the next time he calls, or write for more information to Armstrong Cork Company, Industrial Division, 6505 Dauphin Street, Lancaster, Pennsylvania.

No matter what fiber or blend you're spinning, no matter what kind of equipment you have, there's an Armstrong Accotex Cot that's specially designed to help you get top-quality spinning.



Armstrong ACCOTEX COTS

. . . used wherever performance counts

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MRC PILLOW BLOCKS and FLANGE UNITS with *Labri-Seal® BALL BEARINGS

NEW MRC *Labri-Seals*®

combine the advantages of

- **a rotating flinger**
- **labyrinth seal**
- **and positive contact synthetic rubber seal.**

Their efficiency in keeping grease in and dirt out has been proven in many environments involving extremes in dirt and moisture.

MRC *Labri-Seal*® ball bearings are pre-lubricated at assembly eliminating any need for further lubrication.

Write for FORM 1550-1

PERMANENTLY LUBRICATED
POSITIVELY LOCKING
SELF ALIGNING

Write OUR Engineering Department regarding YOUR bearing problems

MARLIN-ROCKWELL CORPORATION
Executive Offices: **Jamestown, N.Y.**

MRC BALL AND ROLLER *bearings*

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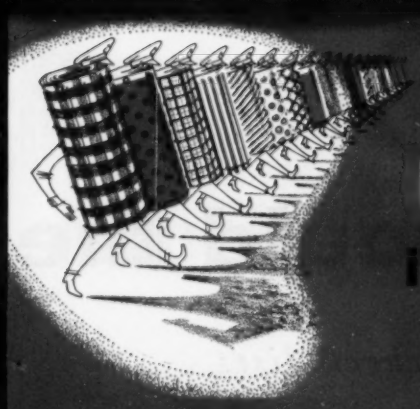
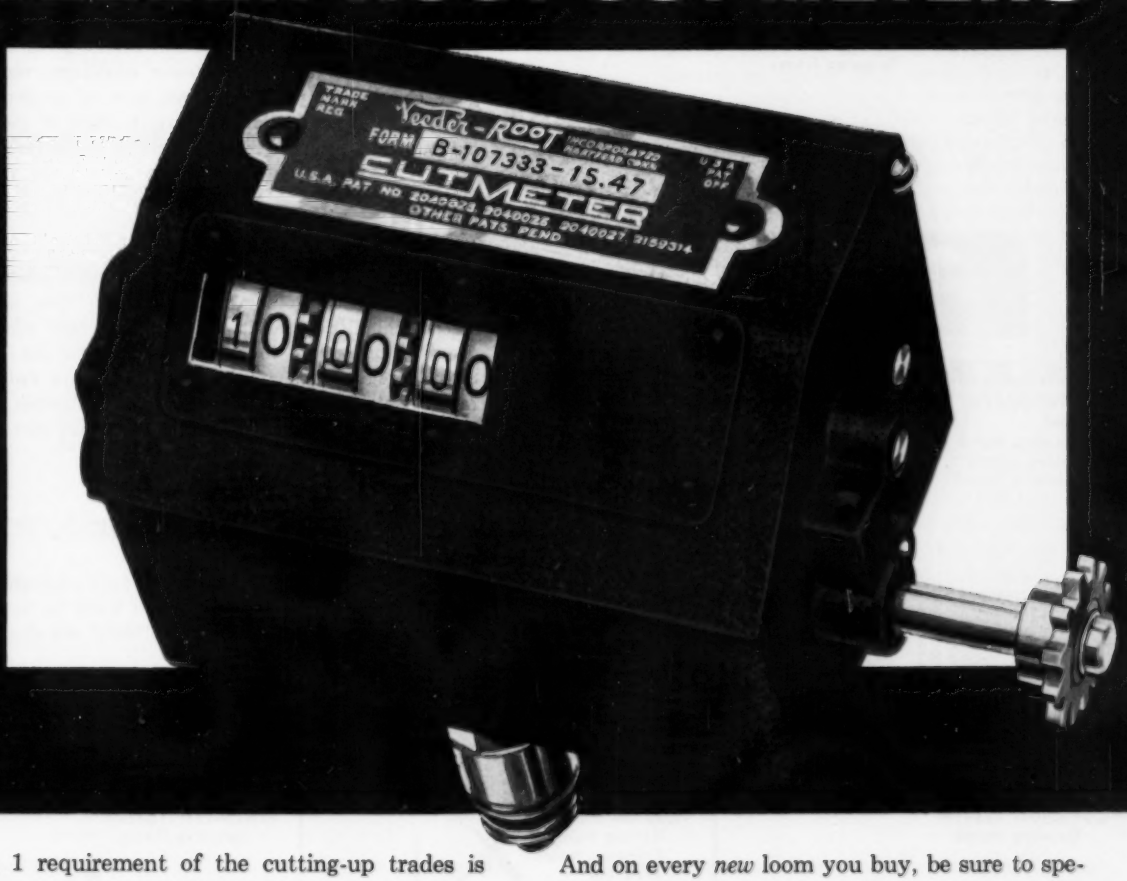
For more data, circle A-26 on Reader Service Card →



PRECISE UNIFORMITY

in cut-lengths of cloth is predetermined by

VEEDER-ROOT CUT METERS



No. 1 requirement of the cutting-up trades is *uniform cut-lengths, without cut-marks.* And you can guarantee them this advantage . . . on single or double cuts . . . simply by equipping every loom with accurate, inexpensive Veeder-Root Cut Meters.

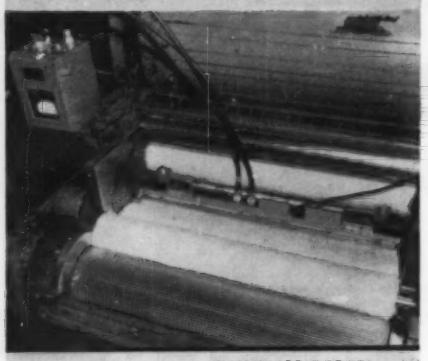
Then weavers are free for more productive work . . . for a closer watch on fabric-quality. And there will be no waste, no shorts or longs.

And on every *new* loom you buy, be sure to specify Veeder-Root Cut Meters. In fact, why not get the benefits of complete Veeder-Root *Count*rol all through your mill, from preparation to finished goods? Count on us to show you how . . . and how much you will save. Just call your nearest V-R representative.

Veeder-Root
INCORPORATED
HARTFORD 2, CONNECTICUT GREENVILLE, SO. CAROLINA

The Name that Counts

VARIMETER
Picker



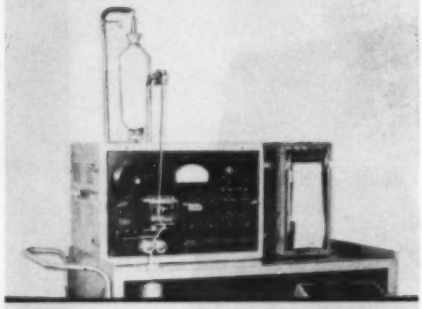
What should the

Here is your check list:

★ AT THE PICKER...

The Uster Varimeter polices the lap inch by inch, indicates irregularities, offers continuous lap control, reduces neps, pinpoints mechanical faults, gives better control of yarn sizes with fewer doublings, reduces gear changes in processing. An inch of picker lap drafts into yards of finished yarn. Control of the lap automatically insures greater efficiency in later stages.

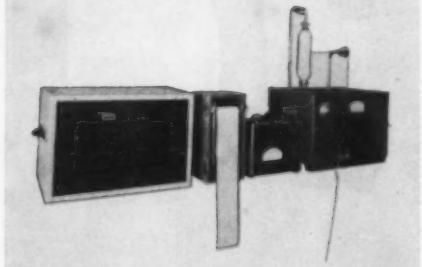
EVENNESS TESTER
Card
Drawing frame
Roving frame
Spinning frame



★ AT THE CARD...

The Uster Evenness Tester offers precise scientific methods of controlling variations in the sliver. Mechanical difficulties in the card and card clothing show up quickly to improve production of the card. Sliver irregularities are indicated, neps are reduced, faulty settings and mechanical irregularities are revealed. Control of sliver mass makes for smoother operation throughout manufacture.

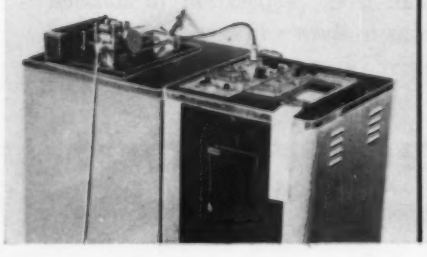
SPECTROGRAPH
Card
Drawing frame
Roving frame
Spinning frame



★ AT THE DRAWING FRAME...

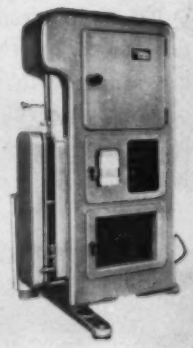
The Uster Evenness Tester, Uster Spectrograph and **Uster's West Point Cohesion Tester** team up to spot mechanical troubles, define proper blend and drafting

COHESION TESTER
Drawing frame



TENSION RECORDOGRAPH
Roving frame
Spinning frame
Weaving
Quilling

STRENGTH TESTER
Spinning frame



modern textile lab DO?

characteristics of blend and allow critical control, predict effect of roll spacing, bi-directional drafting, humidity, draft. Prove production machinery settings, mechanical conditions of machines, short to medium to long term variations. Fast, accurate testing is accomplished at the drawing frame.

★ AT THE ROVING FRAME...

Uster Evenness Tester and **Uster Spectrograph** point out improper drafts, settings and weightings. Here is the latest concept in evaluating short, medium and long term variations that determine precise quality control. Machinery settings are verified; mechanical faults are exposed. **Uster's West Point Cohesion Tester** eliminates numerous tests for fibre fineness, fiber length, surface characteristics, wax content, etc. Achieves optimum twists. **Uster's Custom Tension Recordograph** allows control of speed, most critical factor in production.

★ AT THE SPINNING FRAME...

Uster Evenness Tester and **Uster Spectrograph** work together for fast and effective control of variations to give an accurate picture of final fabric appearance.

Uster Strength Tester registers individual values of breaking strength and elongation, sum of breaking strength and elongation and frequency distribution of breaking strength. 5, 10, 20, 40 tests per bobbin eliminate 90% of technician's time in single strand testing. **Uster's West Point Cohesion Tester** predicts drafting properties of synthetic, natural and blended staples. **Uster's Custom Tension Recordograph** shows up bad skewers and defective bobbin holders, reveals heavy travelers and grooved rings, produces extremely accurate adjustment of winder tension. Tension control in spinning, twisting, winding and spooling becomes critical as production is speeded. **Uster Imperfection Indicator** shows high and low count at any instant. Weak spots, excessive peaks, heavy spots and nep count in sample are easily shown. Yarn is inspected automatically.

★ WEAVING AND QUILLING...

Uster's Custom Tension Recordograph enables warp to be run with less tension, thereby improving the face of the cloth. Detects cause of faulty patterns from whip roll through take-up motion. Eliminates broken picks, filling bands, due to improper shuttle tension. Allows optimum tension settings with less expensive nylon loops. Allows 50 to 60 yards more yarn on each quill.

IMPERFECTION INDICATOR
Spinning frame

Are you getting the most out of your testing lab?
The Uster Plan coordinates testing at every process.
You are cordially invited to our show rooms at
2229 Green Street, Charlotte, N. C.

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USTER

USTER CORPORATION
CHARLOTTE, NORTH CAROLINA

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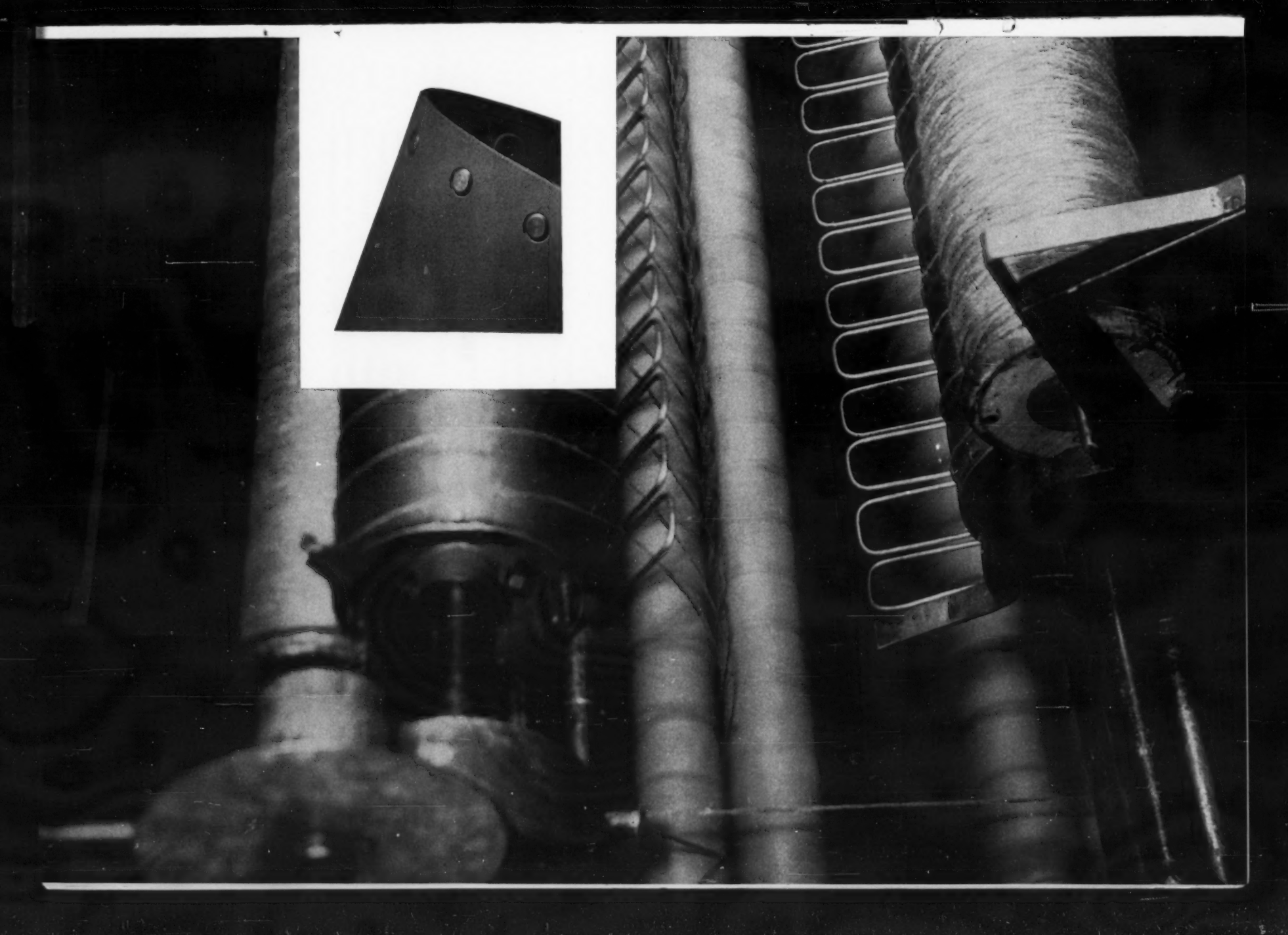

Along with a 30% increase in yarn uniformity

Dayco Rub Aprons

Give you more yarn per card

DOWNTIME'S UNNECESSARY when you use Dayco Rub Aprons. Now you can strip your cards faster . . . because Dayco Rub Aprons require no oiling . . . and save up to $25 an hour. Trouble-free Dayco Rub Aprons practically do away with even routine maintenance . . . which means they virtually pay for themselves in added production.

TOUGH, 2-PLY Dayco Rub Aprons are doubly reinforced with longer wearing, rubber-impregnated fabric. This extra strength construction gives the apron greater flexing stamina and reduces eccentric motion by 33%! Buttons can't help but stay fixed in an apron body as tough as the Dayco 2-ply.

DAYCO ENDLESS CONDENSER TAPE

Features offering additional savings . . . greater card efficiency:

- No stretch—little need for take-ups
- Less tendency to twist or turn over
- Easy to clean—require less attention
- Unaffected by oil or static
- Will not crack, economical, efficient

YARN QUALITY IMPROVES as much as 30% because the texture of Dayco Rub Aprons never varies! Having the highest co-efficient of friction available, Dayco Rub Aprons never slick or glaze, are immune to changes in temperature and humidity, and are unaffected by emulsion oils which cause surface growth in other aprons.

NO NEED TO ADJUST trouble-free Dayco Rub Aprons. Perfectly concentric, they hug the rolls tightly for accurate tracking and assure positive, non-slip drive at all times. Longer wearing, they have an extra-deep synthetic surface with built-in resistance to the abrasion that results from constant rubbing.

Get the facts. Ask about actual cost-savings with Dayco Rub Aprons the next time the Dayco representative calls. Or write the Dayton Rubber Co., Textile Div., 401 S. C. National Bank Building, Greenville, S. C.

Dayton Rubber

Dayco and Thorobred Textile Products for Better Spinning and Weaving

©D. R. 1959

OVERSEAS PLANT, THE DAYTON RUBBER CO. LTD., DUNDEE, SCOTLAND

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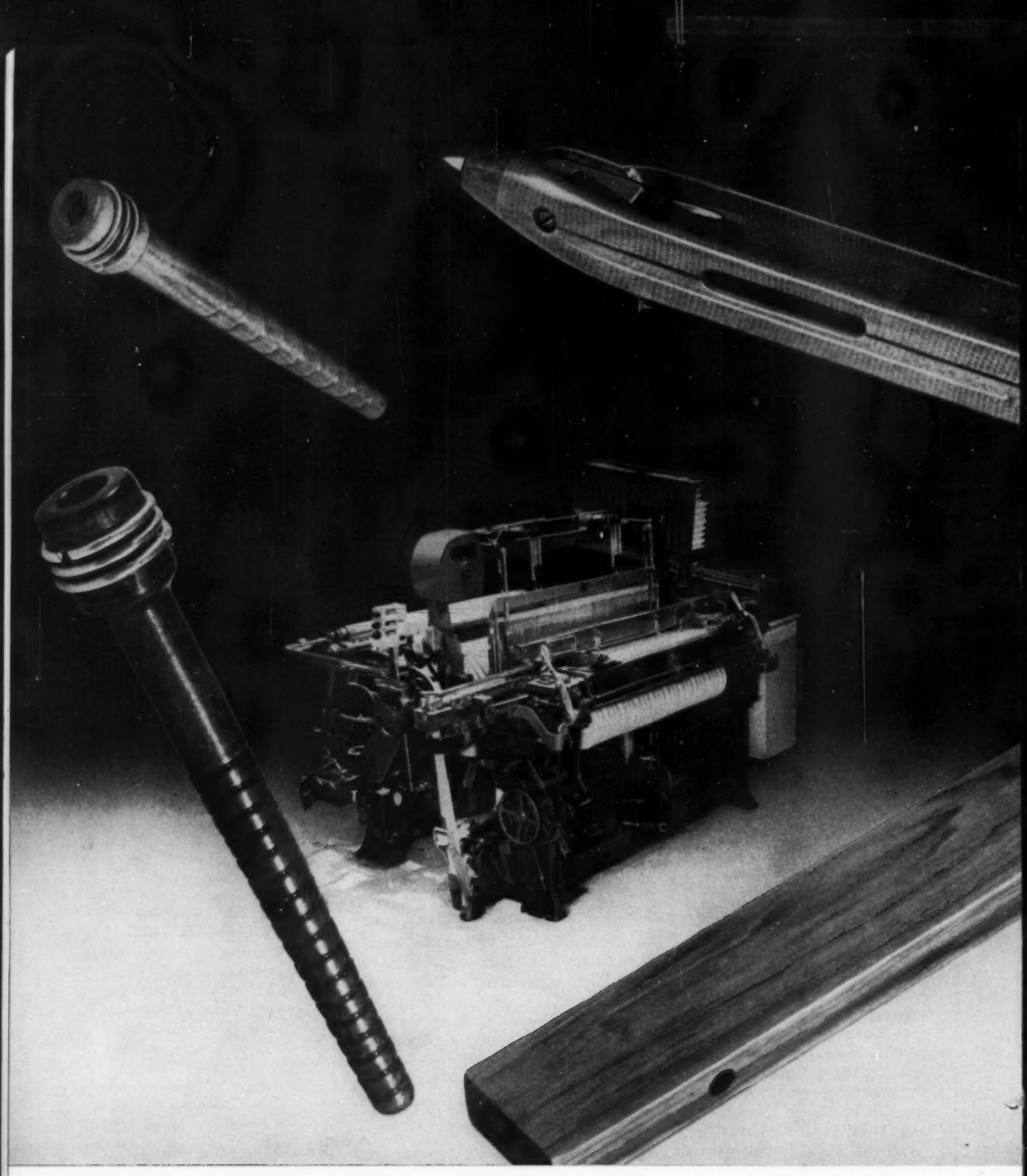

Planned for profit... Greater weave room efficiency and profit is more easily accomplished when Draper looms are backed by Draper accessories and <u>original</u> Draper repair parts. It's just good business sense to look to the <u>original</u> loom builder for quality in essential accessories and repairs. Every part bearing the Draper trademark reflects careful

For more data, circle A-29 on Reader Service Card

development and extensive mill trial. For these reasons, Draper parts and accessories give the maximum in service and performance. Why take chances on misfits or mongrel designs? When you specify **original** Draper products you are protecting your profit picture.

DRAPER CORPORATION

HOPEDALE, MASS. ◦ ATLANTA, GA. • GREENSBORO, N. C. • SPARTANBURG, S. C.

TAPEnology wraps up loose ends for faster warp starts

Here's the quick, easy way to start a warp on a section or loom beam: simply group the ends along shaft of beam; apply a strip of "SCOTCH" Brand Textile Tape No. 254 over the yarn along the length of the beam; revolve the beam, and the yarn ends are wound on in a smooth sheet!

This is just one example of how specialized "SCOTCH" Brand Tapes can save time, simplify work, and cut operation costs in textile production. You'll find other "SCOTCH" Brand Textile Tapes specially designed to simplify almost every operation: warping, slashing, and leasing, to name a few.

We'd like to show you how new TAPEnology serves the Textile Industry today: Just ask your nearest "SCOTCH" Brand Tape Distributor for complete information, or write: 3M Co., 900 Bush Ave., St. Paul 6, Minn., Dept. PZ-59.

When tape costs so little, why take less than "SCOTCH" Brand?

SCOTCH BRAND
SCOTCH BRAND
SCOTCH BRAND
SCOTCH BRAND
SCOTCH BRAND
SCOTCH BRAND
SCOTCH BRAND
SCOTCH BRAND
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SCOTCH BRAND

"SCOTCH" BRAND TAPES
TAPE-O-RAMA Contest
135 prizes . . . write for details
CLOSES JUNE 30, 1959

"SCOTCH" is a registered trademark for the pressure-sensitive adhesive tapes of 3M Co., St. Paul 6, Minn. Export: 99 Park Ave., New York 16. Canada: London, Ontario.

MINNESOTA MINING AND MANUFACTURING COMPANY
. . . WHERE RESEARCH IS THE KEY TO TOMORROW

3M COMPANY

Is It Only Talk?

In the last few weeks, several annual meetings of textile-manufacturing associations have been held. They all had one thing in common: a general feeling of confidence that better days are ahead for the textile industry.

Such a feeling of confidence, even optimism, always occurs when business rises out of a cyclical slump and gets well on its way upward to satisfactory production and better profits. But it seems to us that the current feeling has two or three elements that have been absent, at least for the last several years.

1. Better Long-Term Prospects

As we read the signs, we would say that the first of these new elements is a conviction, more than simple hope, that the textile industry now has a good chance of accomplishing more than a short cyclical swing of better business.

For several years now, the industry has been in a production and profits decline. Even the two-year-cycle upswing carried only to steadily declining high peaks. And industry profits through the third quarter of 1958 had not reached 3% of sales in any quarter in some four or five years, down drastically from the 8% and 9% of the late 1940's and very early 1950's.

With the amount of production-capacity liquidation that has occurred and market changes that hold excellent promise for textiles, there seems sound reason for believing that the textile industry will be in a steadily rising medium-term cycle for the next several years, probably six to eight years. Profits should be good enough to permit mills to engage in tremendous machine and equipment improvement to improve profits still more.

2. Threat of Stockholders

Along with the promise of better longer-term prospects is a growing threat of stockholder dissatisfaction. More and more mill managements answerable to stockholders are aware that the people with textile investments are wanting to know why their investments can't make a reasonable return. More than one mill management has said publicly that their stockholders simply will not stand for more of the poor performance their textile investments have turned in in late years.

So another new element in the present business improvement is the stockholder threat to management. There is a widespread feeling that the chips are down and stockholders are in a mood to take one of the two actions open to them: discharge the management or withdraw their money. The net result is a do-or-die pressure to make a reasonable profit.

3. Awareness of Self-Responsibility

Perhaps the most promising new element is a growing admission that it is no good to look outside for a scapegoat to try to explain away operating losses or poor profits. More and more managements seem to be facing up to the harsh fact that they, and they alone, must answer for failure.

It may be comforting to blame poor profits or a loss on imports, or on competition, or on consumer preferences. But "explaining" or blaming a scapegoat doesn't change the fact that they failed to make a satisfactory profit and that a business can't continue without a profit.

So in late weeks we have seen mills and associations emphasizing the folly of overproduction, of producing for inventory, of ignorance in figuring costs, of a childlike drive for volume with no realistic regard for net profit—in short, of amateurish, opportunistic business methods.

But what is even more significant, more and more mills seem to be facing up to the fact that the guilt is also theirs, that they must solve their own problems rather than hope that some vague "they" will suddenly start behaving and leave themselves free to continue to act like irresponsible children.

As in 1955, the critical period now looks to be this fall. And the factor to watch is mill inventories. If they begin to rise significantly and mills continue on five and six days, all the good-sense talk of this spring and all the good intentions will turn out to be that and nothing more—empty talk and worthless intentions.

J. M. Thomas

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Textile World

Volume 109, No. 5, May, 1959

New Training Method Trains Mender-Burlers in 12 Weeks

• In an accelerated and radically different training course, mender-burlers on woolen and worsted fabrics are now being trained to full skill in only 12 weeks. Both men and women are trained, and older workers become better trained than younger ones.

A NEW METHOD of training menders and burlers on woolen and worsted fabrics is training unskilled workers so well that they reach levels of from 75 to 100% of the speed and accuracy of skilled workers in only 12 weeks.

The training method was developed by the British Wool Employers Council and has been thoroughly tested in recent months. The method is so successful that it is now being expanded to other textile jobs.

In the past in England, a five-year apprenticeship period in mending and burling was necessary. Immediately after World War II, a government training program was organized that trained menders in two years; but only a few menders trained were competent to repair fancy weaves.

The newer BWEC training system came from a study of the old long-term apprenticeship method and the government method.

The apprenticeship sit-by-me method given by a skilled worker had three major pitfalls: (1) the trainee was guided by the whims of the skilled worker, (2) the skilled worker had often forgotten her own difficulties in learning, and (3) training was given only how and when the skilled worker desired to.

To some extent, the government training method had overcome these difficulties, but its aim was to break the job down into convenient stages for learning. As a result, the worker being trained often became only a semiskilled worker.

In both the older systems, only young men and women were accepted because it was believed that older people lacked flexibility of mind to acquire the skill and that poor health and eyesight would hinder their visual training.

But this assumption was proved wrong by the BWEC method—workers over 30 years old acquire great skill quickly.

For direct comparison between the two older methods and the new one, BWEC set up a training course for each of the three methods with 10 women in each. The women were selected by tests for being, as far as possible, equal in intelligence and dexterity.

But for the BWEC method, trainees were additionally screened to be sure they had no previous knowledge of mending. And many of them were over 30 years old.

How Three Methods Compared

The results of 12 weeks of training are:

1. In sit-by-me apprentice training, only one woman acquired a good standard of skill, 90% of full skill. The other nine were very poor in skill.

2. In the government training method, two acquired top skill and two others were rated at 85%. The other six were very poor in skill.

3. The new BWEC method produced two workers with 100% skill and two with 90%, and the other six were over 75% in both skill and accuracy.

All women in the BWEC group were able to mend the more-difficult weaves. Only a few workers in the other two groups were able to handle fancy weaves.

After the first course, people up to 50 years of age were trained. These older workers under the BWEC system proved better than younger workers. Formerly they were considered untrainable.

How the New Method Works

Methods of training used in the BWEC system are radically different from those in standard apprenticeship and government training methods.

The central difficulty in mending is a perceptual one: understanding the weave configurations that tend to disappear and reappear as the mender looks at them more closely.

Perceptual skill in mending cannot be developed by verbal methods of instruction but is developed by conditioning the trainee to the important signals of the task.

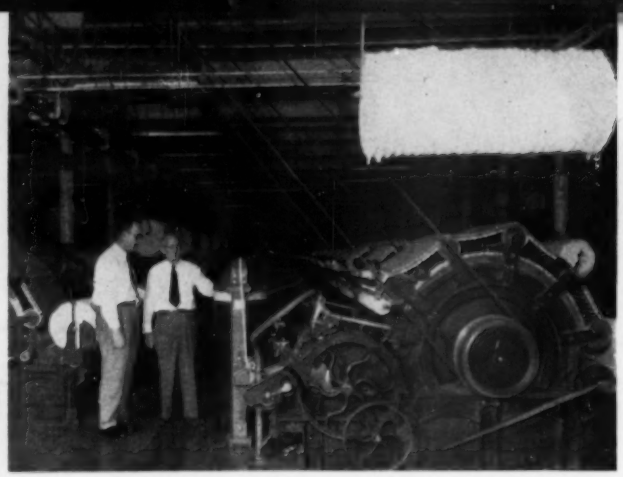
When the task becomes very difficult for the trainee, the instructor makes the job easier. When it becomes very easy, it is made more difficult. Therefore experience is gained in a short time because the work done is always correct experience.

This correct experience is gained by having the trainee mend only specially woven large-scale weaves where yarn interlacings are always easily visible.

When missing threads are sewed in

CONTINUED ON PAGE 173

PICKER ROOM has four two-beater pickers with modernized blending reserves. Production is 350 lbs. per hr. per picker from 13-oz. laps. Laps for cards have been increased to 64 lbs.



CARDS are now all on the second floor, as is the entire carding department. Production is 8 lbs. per hr. of 55-grain sliver. The overhead automatic lap-handling system is new.

Glenwood Mills Modernizes To Make Fine Print Cloths

• This month Mayfair Mills strengthens its position as a major producer of fine print cloth by swinging its third completely modernized mill into production. This $1½-million program was completed at Mayfair's Glenwood Mills Div., Easley, S. C.

EARLY THIS MONTH Mayfair Mills wraps up a complete modernization program at its Glenwood Mills Div. by putting a warp in the last rebuilt and relocated loom. Completion of this $1½-million program includes every department in the mill from opening through the cloth room.

This latest move gives Mayfair its third modern mill for weaving fine print-cloth construction and puts the company in the top half-dozen companies producing these fabrics.

Now Glenwood is producing annually over 35-million yds. of print-cloth construction ranging from 60x48 to 80x80 in 39- to 45-in. widths. End uses of the fabric are fine dress goods, industrial fabrics, coated fabrics, and handkerchiefs.

Although only 16 looms were added in the over-all modernization program, fabric yardage was increased 8%. But Glenwood's greatest gain is in higher-quality yarn and fabrics and greater flexibility of machinery.

Popular 78-Square Is Woven

For example, Glenwood is a big producer of the presently popular 41-in. 78x78 print cloth of 4.05 yds. per lb. With several million yards of this fabric already produced and 500 looms weaving it at present, customer reaction continues very favorable.

In addition to improving all its departments, Glenwood has given constantly increasing attention to quality control, cleaning schedules, waste control, and other operations designed to improve quality and efficiency.

Quality and waste are carefully controlled in every department. Waste is collected, weighed, sorted, and recorded throughout the mill. The testing laboratory was set up as recommended by the Institute of Textile Technology, of which Glenwood is a supporting member.

Along with machine modernization, the entire mill was equipped with an evaporative-cooling air-changing system. And with this work, windows were enclosed, which gives a new outside appearance to the structure.

Machine Layout Is Important Feature

The present straight-line flow of yarn and fabric throughout the mill is an important phase of Glenwood's modernization.

A new weave room made space for moving carding machinery from the first floor to the second floor, where the entire carding department now is.

Looms were consolidated into one large first-floor weave room from three previous separate locations. This new weave room contains 1,278 looms.

With the present layout, the opener room is in an area by itself. Two complete mixes totaling 112 bales of 1⅛-in. California and Memphis cotton are laid out all the time. One mix of 56 bales is being carefully

Technical data on Glenwood's plant layout supplied by J. E. Sirrine Co.

DRAWING is 152 deliveries of two-process six-ends-up breaker and finisher frames with new block creeling. Draft constant is 286 for both 76 deliveries of breaker drawing and 76 finisher.

WARP SPINNING is 24,000 spindles of new frames with a pneumatic end-collection system. Traverse is 9 ins. on 10-in. tubes. Overhead cleaning was added.

blended while the second 56-bale mix is allowed to bloom for one day.

Mixes are all checked by Micronaire testing to blend for the correct yarn strength and nep-count control.

The cleaning line was changed, and return-air filters replaced the old dust house to hold humidification. Lap conveyors were also put in.

The picker room is at the east end of the second-floor card room where cotton fiber in process starts its move westward.

The picking department consists of four two-beater pickers. Front beaters operate at 900 rpm., and back beaters run at 1,050 rpm.

The 158 cards receive 64-lb. laps from a new lap-handling system. The pneumatic stripping system is below the floor instead of overhead. The new 18x42-in. cans more than tripled the sliver-doffing cycle.

There's Large-Package Drawing

The 152 deliveries of new two-process breaker and finisher drawing produce 114 lbs. of 55-grain sliver per delivery per 8 hrs.

There are 76 deliveries of breaker drawing that have a draft constant of 286. Total draft (excluding tension) is 5.97: back to third roll 1.29; third to second roll 1.75; second to front roll 2.65. Front-roll speed is 142 ft. per min.

The 76 deliveries of finisher drawing have a draft constant of 286. Total draft (excluding tension) is 6.09: back to third roll 1.34; third to second roll 1.93; second to front 2.36. Front-roll speed is 142 ft. per min.

Large-package roving frames are doing much to increase production and improve quality. The 14 frames have 126 spindles and produce 10x4⅞-in. packages.

Modernization and installation of new equipment in the spinning department also were significant in quality improvement.

The complete spinning room is on the third floor. Filling spinning is at the east of the building. Spinning on 8-in. bobbins is being continued rather than a change to larger packages for higher quality in weaving.

After filling bobbins are doffed into glass-fiber boxes at

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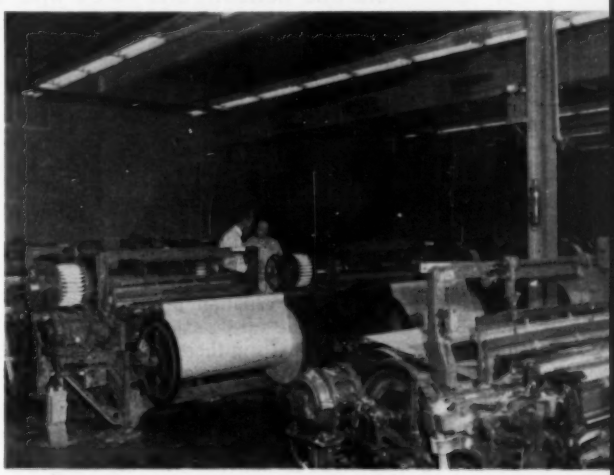


LOOMS were rebuilt and motorized. This new section of the weave room has glazed-tile walls, continuous-row fluorescent lamps, Kalman-treated concrete flooring, and evaporative air changing.

CLOTH ROOM starts with sewing and a brusher-shearer range. Rolls of fabric are then inspected on machines, folded, and graded flat on a table. A conveyor removes them for shipping.

Uneven Tension in Spinning Is Caused by Separators

- **A combed-yarn mill was having trouble with excessive ends down after installing new spindles, and the management called in a trouble shooter**

- **The trouble shooter investigated uniformity of tension between front rolls and bobbins, and here's what he found out—**

A COMBED-YARN MILL that primarily spins warp yarn installed new spindles to increase the length of traverse on the bobbins. Ends down increased sharply, and the weavers did not like the yarn.

Tests showed that all characteristics of the yarn were generally satisfactory except that the yarn had a high variation of elongation. Evenness and single-strand tests were made.

The significant factor of variation in elongation indicated uneven tension on the yarn because the short-term evenness of the yarn was good and there was not too much range in the twist. The CV of elongation was 37.64%; it is satisfactory only if below 20%.

Other Tests Were Made

Other tests were made to find out why the elongation of the yarn varied. Basic conditions of ring diameter, spindle speed, and length of traverse were satisfactory. Rings were in good condition, and the traveler-change period was correct.

Traveler sizes were investigated and found to be right for the number and kind of yarn being spun.

Further tests were made to see if there was enough elongation in the yarn to start with. Too little elongation is the direct result of too much tension on the yarn between the front rolls and the bobbin. Too much tension at the winders, spoolers, and quillers also can cause trouble during knitting or weaving.

Travelers Affect Tension

The main cause of too much tension at the spinning frame is overweight travelers; but since in this instance traveler weight was correct, other possible causes were investigated.

When twist is on the low side for added production, the yarn may not have enough elongation to keep it from being tender. One more tooth of twist was added, and the spindle speed was increased slightly.

This change did not improve ends down; so the frame was changed back to its original twist.

It was finally determined that the separators were too short for the length of traverse being used. At times during the building of the bobbin, the yarn whipped over the tops of the separators. This condition resulted in uneven tension on the yarn, and over a period of time this high variation in tension can cause excessive wear on spinning rings.

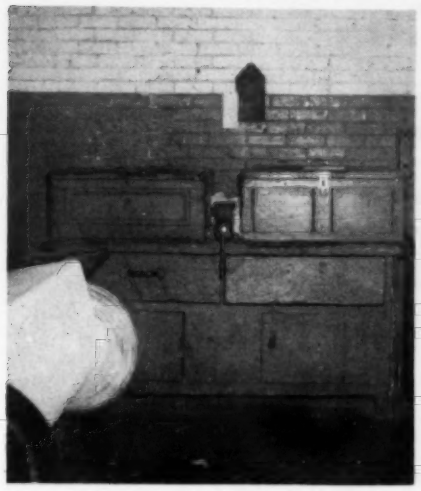
The mill put long separators on one frame. Yarn from this frame was tested, and almost every quality of the yarn was improved. The critical quality of variation in elongation was improved to the point that it was very good.

The CV of elongation of the new yarn was 17.79%. Ends down were reduced substantially. Skein-strength break factor increased 150 points, and range in break factor was reduced over 280 points. Single-strand break factor was increased almost 2,000 points, and average maximum variation was reduced from 71.2% to 68.0%.

Yarn-Evaluation Test Data

	Short separators	Long separators
Yarn size	36.2	37.4
Range	0.9	1.2
Maximum variation (%)	71.2	68.0
CV (%)	17.8	17.0
Skein strength		
Break load (lbs.)	65.3	67.3
Break factor	2,367	2,516
Range	334	47
Single-strand test		
Break load (grams)	262.50	300.6
CV of break (%)	10.81	12.31
Elongation (%)	7.20	7.70
CV of elongation (%)	37.64	17.79
Break factor	9,503	11,444
Twist		
Turns per inch	26.1	24.8
Range	2.6	3.8
Twist multiplier	4.34	4.05

YARN CHARACTERISTICS were improved by long separators. Improvements are particularly apparent in the CV of elongation, break factors, and maximum variation.



OLD WORKBENCHES like this one were discarded to make room for the new ones. Loomfixers' tool boxes are now kept on racks.

NEW WORKBENCH is approved by this employee advisory committee. There's adequate space for each loomfixer's small supplies.

Loomfixer-Supply System Keeps Joanna Looms Running

• One of the first projects approved by a recently organized employee advisory committee at Joanna Mills is a loomfixer-supply system in the weave room. Now the weave room is neater, and loom downtime from lack of small supplies is reduced.

A NEAT WEAVE ROOM and a small but adequate store of loomfixing supplies in the weave room are the results of recommendations made by the employee advisory committee at Joanna Cotton Mills, Joanna, S. C. Looms are never stopped waiting for loomfixers to get small supplies.

Before the committee made the recommendations, loomfixers worked from old workbenches with two drawers and two cupboard spaces. Most of the working space on top of a workbench was covered by one or more tool boxes. Even with the large amount of space for storage, loom supplies were often inadequate because some loom parts were duplicated and others were not stored.

The basis of the new supply system is a new workbench to replace the old workbench for each section of looms. The new workbenches are neat and compact and have three compartments for the storage of supplies. Each compartment has two swinging doors equipped with a lock. The workbenches were made in the mill machine shop.

Loomfixers on each of the three shifts keep their own inventory of the most frequently used repair parts. The top of the workbench provides adequate work space and has a machinist's vise bolted to it.

No tool boxes are placed on the workbenches. Racks are installed nearby for each loomfixer's tool box. All tools and supplies furnished by the mill are kept in the workbenches.

Supervisors Check Supplies Often

The overseer and the assistant overseer have a master key that fits all the locks on the workbenches. An inspection is made at least once a month to see that the benches are kept tidy and the correct inventory of supplies is maintained.

When a loomfixer needs to replenish his stock of repair parts, he takes the used parts to the supply room and exchanges them for new parts.

Here is the inventory of supplies that are kept by each loomfixer:

6 pickers
1 box picker screws, $\frac{3}{8}$-in. No. 7
3 picker sticks
1 long lug
1 short lug
3 checkstraps
1 set binders
1 set box fronts and extensions
4 $\frac{3}{8}$x1-in. capscrews
4 $\frac{7}{16}$x1$\frac{1}{4}$-in. loom bolts
4 $\frac{1}{4}$x2-in. loom bolts
4 $\frac{7}{16}$x2-in. loom bolts
4 $\frac{3}{8}$x3$\frac{1}{4}$-in. loom bolts
4 $\frac{3}{8}$x3$\frac{1}{4}$-in. heel bolts with 2 nuts
4 $\frac{3}{8}$x2$\frac{1}{2}$-in. machine bolts
2 sheets sandpaper
2 sheets emery cloth
1 3-in. strip of slab leather
4 jack hooks
4 harness-strap hooks
4 harness T-hooks
2 harness straps
1 piece shuttle dressing
4 cloth-roll blocks
4 No. 4 harness eyes
24 assorted cotter pins

How To Blend at Drawing On the Cotton System

• Increased usage of man-made fibers requires the average spinning mill to make all kinds of blends at short notice. Small or sample orders often cause much trouble and loss of production. Here's a system that can help you blend small lots at drawing instead of in the opening room.

By N. H. POMFRET

MAN-MADE FIBERS can be blended at a number of places in the processing line of the cotton system. Proper proportions are hard to maintain, however, when small lots are run. The most economical place to blend small lots is at the drawing frame.

The major drawbacks to blending at drawing are the small number of slivers fed and the reluctance of management to run the frames out of production balance.

A six-ends-up drawing frame can easily make five blends from two different fibers without changing sliver weights. Table 1 is a guide to blending six slivers composed of two different fibers.

The composition of the blend is fixed at the first drawing-frame passage. All slivers at the second passage have the same proportion of fibers A and C as at the first passage.

Table 1—Percent Value of Slivers After One Drawing

Slivers		Blends	
A	C	A	C
1	5	16.6%	83.3%
2	4	33.3	66.6
3	3	50.0	50.0
4	2	66.6	33.3
5	1	83.3	16.6

FIVE BLENDS can be made from two different fibers without changing sliver weights by using this guide to percent values after one drawing.

Production Is Lowered

By sacrificing some production, it is possible to blend again at the second passage and reduce the proportion of one fiber to 3%. A third passage would bring the figure down to 0.5%.

To get a better picture of blending at the drawing frame, assume that fibers A and C combine to produce blend B. One sliver of A and five slivers of C become blend B$\frac{1}{6}$, two slivers of A and four slivers of C become blend B 2/6 or B$\frac{1}{3}$, etc.

When the fibers are further blended at the second passage, it is relatively simple to determine the amount of a given fiber in the final blend. Take, for example, this blend: A1 B$\frac{1}{6}$ B$\frac{1}{3}$ B$\frac{1}{2}$ B$\frac{2}{3}$ B$\frac{5}{6}$. The percentage of A in the resultant sliver is:

$$100\ \frac{(1+1/6+1/3+1/2+2/3+5/6)}{6} =$$

$$100\ \frac{(21)}{36} \text{ or } 58.33\%$$

Calculation Is Easy

If all of the blended slivers at subsequent passages are the same, the resulting blend can be determined by multiplying the proportion of A slivers at the first passage by the proportion of blended slivers at the second and third passages. Example:

First passage—A A C C C C = $\frac{1}{6}$A or 33$\frac{1}{3}$%

Second passage—B$\frac{1}{3}$ B$\frac{1}{3}$ C C C C = $\frac{1}{3}$x$\frac{1}{3}$A = 1/9 or 11.11%

Third passage—B 1/9 B 1/9 C C C C = $\frac{1}{3}$x$\frac{1}{3}$x$\frac{1}{3}$A = 1/27 or 3.7%

In this example, the blend after the second passage becomes B 1/9 because one-ninth of the stock is composed of A fibers. B 1/9 is made from 36 card slivers in groups of six. Two slivers in each group are A fibers, which means that the blend is $\frac{1}{3}$ or 33.33% A fibers after the first passage and 1/9 or 11.11% A fibers after the second passage.

Only two slivers of the blend are used in the third passage, so that at this stage the proportion of A fibers is 4/36 or 1/9.

To check the blend against the formula, the calculation is:

$$100\ (1/9+1/9+0+0+0+0) =$$

$$100\ \frac{(8)}{216} \text{ or } 3.7\%$$

When two slivers of rayon and four slivers of cotton are blended at the first passage, for example, the resulting sliver is 2/6 or $\frac{1}{3}$ blend of rayon. If two of these slivers are put up at the second passage along with four slivers of cotton, the resulting blend would be: 2/6x2/6 = 1/9 rayon (and 8/9 cotton).

Table Simplifies Work

Table 2 shows the percent value of different numbers of card slivers where two drawing passages are made. Here is how to use the table in making a 20-80 blend:

Assume that the lower percentage is A fiber and the higher is C fiber. The table shows that eight card slivers have a value of 22.22%. If this value is close enough to meet requirements, divide the eight slivers into six groups of blends as follows: B$\frac{1}{6}$ B$\frac{1}{6}$ B$\frac{1}{6}$ B$\frac{1}{6}$ B 2/6 B 2/6.

To obtain this grouping, two blends of A and C slivers are made at the first drawing passage. The blends are:

Blend 1—One A and five C slivers

Table 2—Percent Value of Slivers After Two Drawings

No. of slivers	Percent value	No. of slivers	Percent value
1	2.77%	19	52.77%
2	5.55	20	55.55
3	8.33	21	58.33
4	11.11	22	61.11
5	13.88	23	63.88
6	16.66	24	66.66
7	19.44	25	69.44
8	22.22	26	72.22
9	25.00	27	75.00
10	27.77	28	77.77
11	30.55	29	80.55
12	33.33	30	83.33
13	36.11	31	86.11
14	38.88	32	88.88
15	41.66	33	91.66
16	44.44	34	94.44
17	47.22	35	97.22
18	50.00	36	100.00

BLENDS can be predetermined approximately at drawing by selecting the nearest percent value required for a given blend and reading across to the corresponding number of slivers needed.

Blend 2—Two A and four C slivers

At the second passage, four Blend 1 and two Blend 2 slivers are fed to produce a blend of 22.22% A fiber in the yarn.

Accuracy Can Be Increased

If this percent value is not close enough, it is possible to produce a 20-80 blend almost exactly on the nose by using Table 3. This table shows the percent values of successive sixths of one card sliver.

These values are obtained by making a blend of card slivers at the drawing frame and then running this blend through the first passage with other card slivers. In this way, B$\frac{1}{6}$ becomes B 1/36.

Table 2 indicates that seven A slivers give a percent value of 19.44% and Table 3 shows that one B$\frac{1}{6}$ would add 0.463%. Blending of the two slivers gives 19.9% of A fibers.

To summarize the operation:

Preliminary passage—CCACCC = B$\frac{1}{6}$

Table 3—Percent Value of Slivers After Three Drawings

Sliver increments	Percent value
1/6	0.463%
2/6	0.926
3/6	1.389
4/6	1.852
5/6	2.315
6/6	2.777

PERCENT VALUES for successive sixths of one card sliver can be combined with the approximate values given in Table 2 to determine exact blends after three drawings.

First passage (a)—CCAACC = B 2/6

First passage (b)—CCA B$\frac{1}{6}$ CC = B 7/36

Second passage—B$\frac{1}{6}$ B$\frac{1}{6}$ B7/36 B2/6 B$\frac{1}{6}$ B$\frac{1}{6}$

To check the accuracy of this blend, the calculation is:

$$\frac{100 \times}{\frac{(6/36+6/36+7/36+12/36+6/36+6/36)}{6}} = 100\,\frac{(43)}{216} \text{ or } 19.9\%$$

System Can Be Expanded

This same approach can be used for blending more than two fibers, but the procedure may possibly cause some loss in production. For example, to make a 30-25-45 blend of three fibers, the operation would require one preliminary passage, six first passages, and one second passage. The procedure is the same, however; and in some instances it undoubtedly would pay off.

Humanics—*A TW Brief*

Final Decisions Must Be Clear

When top management cannot get decisions carried out accurately and efficiently, the trouble may not be lack of cooperation.

Confusion may have arisen from the earlier discussion so that foremen or other supervisors are not sure about the details of the decision.

A certain point that came up during the discussion is sometimes left out of the final decision. You can avoid such confusion by following these simple rules:

1. In the final decision and in the instructions based on it, be definite about the points retained from the discussion periods.

2. Explain what lies behind the instructions in a positive way. Use extreme caution when you start explaining, "We examined this angle but finally decided against it." If it's necessary to mention these matters, emphasize their preliminary nature and stress that they were not adopted.

3. If discussions range over a wide field, select the stage where each level of authority is to be brought in. Don't load foremen's minds with facts and figures not essential to the carrying out of the final decision.

4. Watch for evidence of misunderstanding. Some may slip through in spite of your best efforts. If necessary, go into the positive angles again and wring out any confusion carried over from earlier discussions.—GEORGE M. DODSON

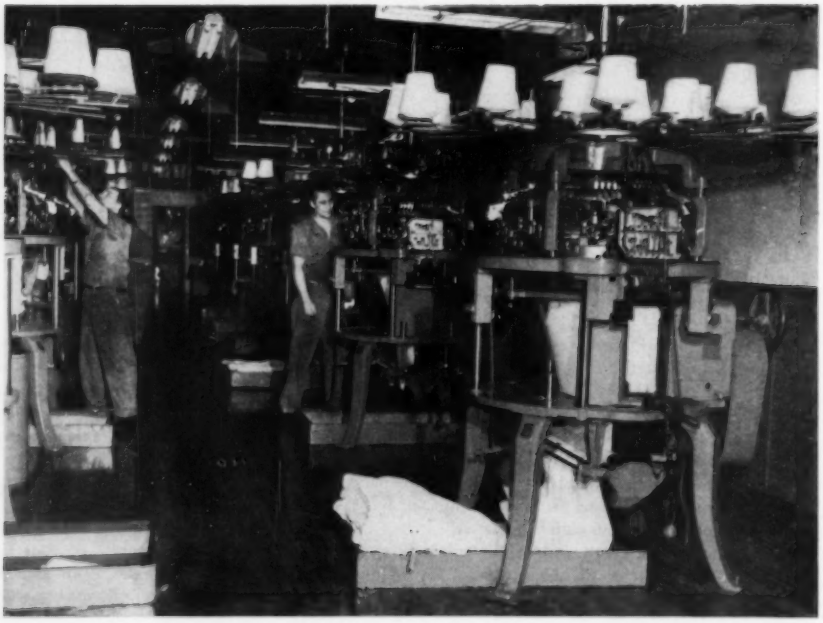
NEW STYLES are worked out on hand-operated flat machines in the new development department. If the style is successful, the fabric is then knitted on power machines.

INSPECTING TABLE is positioned in the center of the knitting room. Every third roll of fabric from each machine is drawn over the table top, which is illuminated from above and below.

New Ideas for Stretch Yarns Increase Sweater Production

The popularity surge in sweaters of high-bulk and textured yarns has doubled production each year since Shelley Knitting Mills was formed. Present emphasis at Shelley is on—

- New fabric developments
- Modern knitting methods
- Better materials handling



KNITTING MACHINES produce about 100 doz. sweaters each per week. Knitters look after four machines. The sweater fabric falls into boxes, which have been taped at the edges to prevent pull threads on Ban-Lon sweaters.

SEWING MACHINES are grouped together, but ample space around the groups allows for easy transport of materials. Lights are arranged immediately over each group.

PRESSING is done on exact-dimension forms. One operator looks after two forms. Tables and trucks are equipped with 45° casters so they don't pick up lint and threads.

SWEATERS KNITTED FROM HIGH-BULK AND TEXTURED YARNS have helped Shelley Knitting Mills Co., Inc., Philadelphia, Pa., grow rapidly since its start in 1954. That year, only 20,000 doz. sweaters were produced; now over 150,000 doz. Ban-Lon and Orlon sweaters are being produced.

By styling sweaters around the new yarns, Shelley has doubled production each year. But modern methods and new developments have been instrumental in the increased production.

President John M. Ashe mortgaged his home to start the mill with four 13-cut TAI machines. Equipment has been added continuously, and now there is more than $\$\frac{1}{2}$-million worth in place.

New Machines Are Versatile

Most of Shelley's sweaters are knitted on 15 16½-cut TAI machines. Eight 14-cut TJI machines have recently been installed to produce sweaters with greater style possibilities.

Leighton 4½-cut machines and various flat machines are used to knit bulky-knit sweaters. Single-section full-fashioned sweater machines are being converted from 21 gauge to 30 gauge to produce finer-gauge sweaters.

TAI machines have 30-in. cylinders, and they operate at 13 rpm. Each machine produces about 100 doz. sweaters per week, and each knitter looks after four machines.

No special devices are used to knit Ban-Lon yarns, but each feed is threaded to suit the yarn being run to give the best stitch. Practically no tension is placed on the yarn as it leaves the cone.

Boxes are placed under the knitting machines, and the fabric falls into these boxes. Adhesive tape is applied to the edges of the boxes to keep the sharp edges from causing pull threads.

During the slack period between seasons, the knitting machines are overhauled. All cam sections from the machines are removed, and cams are checked. Needles are taken out of the cylinder and dial, which are thoroughly cleaned. Only perfect needles are put back in the machine.

Floors throughout the mill are sanded and sealed during the in-between season. Lighting is rearranged in the sewing section, and other maintenance work is done at this time.

One-third of the production from the knitting machines is checked over an illuminated table in the center of the knitting room. This table was developed in the mill, and it has all sharp corners taped.

The fabric is drawn over the table from a truck and examined by girls who specialize in this work. When not examining the fabric on the table, these girls help knitters check the fabric on the machines.

New Styles Are Developed

A development department has recently been opened. New fabrics are developed on hand-operated flat machines in this department. New ideas such as fancy collars and necks are developed; and if they are suitable, the new style is tried on the power equipment. A man with considerable knitting experience was hired to take charge of this department.

Immediately after knitting, the sweater lengths are relaxed in tumble dryers. An automatic steamer then treats the sweater lengths before they are separated.

This steaming machine operates continuously, but an electric eye cuts off the steam while the sweater cuffs pass the steam jet. This action retains the full elasticity of the cuff.

How Sweaters Are Pressed

After cutting, sewing, looping, and dyeing, the sweaters are pressed on exact-dimension forms to produce the true sweater size. The forms have interchangeable pieces to suit all sizes and styles made at Shelley.

One operator handles two of the pressing forms. While one form is being dressed, the sweater on the other form is drying.

The sewing section has been separated from the knitting section by a clear Plexiglas partition, which runs from wall to wall. This partition keeps noise and lint from the knitting room from drifting to other parts of the mill and yet provides good visibility and doesn't sacrifice light.

All trucks and many work tables used in the knitting, sewing, and pressing sections are equipped with Universal casters that run at a 45° angle. These casters don't pick up lint as readily as regular wheels or casters, and they provide easy transportation of sweaters and fabric.

All table tops in the sewing room are covered with tape to keep the Ban-Lon threads from snagging. Sewing machines are arranged in small sections with ample room around each section to allow the tables to be moved easily and quickly.

A quality-control supervisor has recently been added to Shelley's staff. He concentrates on quality in the cutting, sewing, and finishing section.

Narrow-Fabric Checklist Prevents Six Major Defects

• Most close-outs in narrow fabrics are caused by only six major defects. Here's a checklist that will prevent these defects—

By JAMES WHITFIELD

THROUGH PROPER FOLLOW-UP of loomfixers and weavers, you can prevent most defects in ribbons and other narrow fabrics. This checklist will show you how to correct current defects; but more important, you can check looms at warp-outs to prevent future defects.

Streaks in Ribbon

1. Ends out
2. Misdraw
3. Misreed
4. Wrong tie ends
5. Tight or slack ends
6. Dirty warp-yarn end
7. Bad reed

Action To Correct

1. Put in ends
2. Correct the draw in the harnesses
3. Correct the draw in the reed
4. Change to the right yarn
5. Adjust warp tension
6. Use a piecing spool until the end clears
7. Replace the reed

To Prevent Future Defects

Be sure all looms have correct tie ends; keep a correct drawing-in draft at each loom; train weavers to use tie spools; show weavers how to avoid springing the reeds.

Uneven-Width Ribbons

1. Bad bobbin tensions
2. Bad resort springs
3. Wrong resort springs
4. Bad warp tensions
5. Wrong reed
6. Loom timed wrong
7. Bad bobbins

Action To Correct

1. Adjust bobbin tension
2. Replace resort springs
3. Put in correct-size resort springs
4. Adjust warp tension
5. Replace reed
6. Time loom
7. Replace bad bobbins with good ones

To Prevent Future Defects

Have correct shuttle springs put in at each warp remount and clean the shuttles; see that correct reeds are used on new harnesses; instruct loomfixers in correct loom timing; have preparation department use good bobbins.

Shires, Stop-Start Marks

1. Beam jumping
2. Studs on bearings worn in lay arms or base plates
3. Bad motor
4. Keyway in motor shaft worn, or pinion worn
5. Worn or bad bull gear
6. Brake worn or not adjusted correctly

Action To Correct

1. Polish beam head; free brake band
2. Replace studs on bearings in lay arms or base plates
3. Repair or replace motor
4. Replace shaft or pinion gear
5. Replace bull gear
6. Adjust brake, or overhaul it

To Prevent Future Defects

Have all beam heads polished in the slasher room; have loomfixers replace all worn studs and bearings in the lay arm or base plates at warp remounts; also replace worn bull gears and motor pinions at this time; have machine-shop employees check motors and brakes before failures.

Dirty Ribbon

1. Fabric take-up not working
2. Fabric dragging on shuttle motion
3. Fabric wrapped around take-up roll and stopping roll
4. Dirty filling
5. Loomfixers' hands dirty
6. Weavers' hands dirty

Action To Correct

1. Fix take-up so that ribbon will not drag on the floor
2. Cover ribbon near moving parts of the loom
3. Take roll off the loom, and clip loose warp ends off the roll
4. Replace filling with clean filling
5. Have fixers use a hand cleaner
6. Have weavers wash hands often and use French chalk

To Prevent Future Defects

At warp remounts or pattern changes, replace worn parts in the take-up; completely cover the ribbon near moving parts; keep clean water and towels at looms all the time; furnish loomfixers a special hand cleaner, and see that they use it.

Filling Breaks and Run-Outs

1. Bad bobbins
2. Bad shuttle springs
3. Wrong shuttle springs
4. Unevenly wound bobbins
5. Too much stroke on batten
6. Too much stroke on shuttles

Action To Correct

1. Buy new bobbins
2. Replace bad springs
3. Replace wrong springs
4. Piece in new bobbins before run-outs
5. Reduce batten stroke
6. Reduce shuttle stroke

To Prevent Future Defects

At warp remounts, set the stroke on all battens and shuttles; change all shuttle springs; keep pieces of quilled filling on each loom.

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Gastonia's Oldest Mill Modernizes Yarn Machinery

• Over 16,000 new spindles and the latest preparatory equipment have improved both yarn production and quality at Trenton Cotton Mills, Gastonia, N. C. Here's how Trenton runs its new equipment—

CARDING AND SPINNING MODERNIZATION has increased over-all production and reduced manufacturing costs substantially at Trenton Cotton Mills, Gastonia, N. C. The improvements, which cost more than $750,000, nearly doubled manhour production and improved quality greatly.

Trenton, the oldest mill in the Gastonia area, produces about 50,000 lbs. of 30s to 50s yarn weekly. Up to four-ply yarn is put on cones, tubes, skeins, dye tubes and springs, ball warps, and section beams.

End products are largely sewing thread and rubber-covering yarn. Since these products require high tensile strength, California cotton is used exclusively.

Sixty bales are laid down and opened for each mix. When cotton is bought from more than one shipper, the bales from different sources are alternated in the feeding line.

The opening room has four feeder hoppers and one waste hopper that feed through two cleaners to a feeder hopper over two single-process pickers.

The pickers have a blade beater in the back that runs 1,175 rpm. and a Kirschner beater in front that runs 1,425 rpm. The machines produce a 12½-oz. lap that weighs 44.6 lbs.

Settings Are Watched Carefully

The 63 cards produce a 50-grain sliver at 6¼ lbs. per hr. Cylinder speed is 173 rpm., lickerin speed 438 rpm., and doffer speed 6½ rpm. Special attention is paid to card settings, which are:

Feed plate 0.007 in., doffer to cylinder 0.007 in., flats to cylinder 0.009 in., front comb 0.022 in., bottom back plate 0.017 in., top back plate 0.022 in., front top plate 0.034 in., screen lip 0.017 in., screen center 0.034 in., screen front ⅞ in., lickerin to cylinder 0.007 in., and mote knives 0.005 in. (or as close as possible).

One man runs 42 cards and does all cleaning, laying up of laps, and doffing. A second man handles the other 21 cards plus two lap machines.

One process of drawing follows carding. A 40-grain sliver is made with a draft of 10 and put up in a 20-in. lap for combing. The drawing sliver has a Uster evenness of 18%, and 765-grain laps weigh 26 lbs. each.

Combers Run 98 Nips per Minute

Ten double-sided combers with six deliveries per side produce 35 lbs. of stock per hour at 98 nips per minute. About 15½% noils are removed. Draft is 7.9, and the sliver weighs 51 grains per yard. Fan speed is 900 rpm.

Two processes of drawing follow combing. The 51-grain comber sliver is made into a 56-grain sliver on three-over-four breaker drawing with a draft of six. This sliver is then

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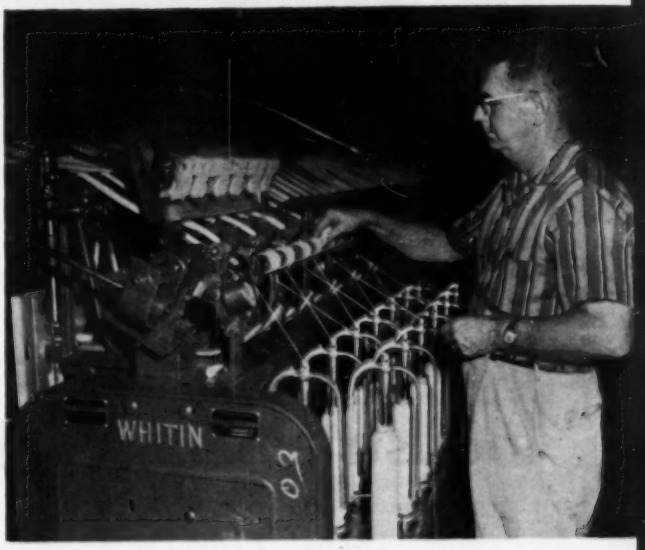

NEW 10x5 ROVING FRAMES produce 32-oz. packages of 2- and 2½-hk. roving that is double creeled at spinning.

YARN STRENGTH has been greatly improved by the installation of new spinning frames and mechanical cleaners.

HOIST AND CONVEYOR carry empty bobbins to filling-winder heads so that bobbin handling is fully automatic.

DOUBLE YARDAGE between warp run-outs comes from two yarn beams that feed to a single woven fabric.

How Flightex Throws and Weaves Industrial Glass Fabrics

• Flightex Fabrics' formula for making the newest glass fabrics is: (1) a small plant for close control of yarns and fabrics, (2) precision machine settings to reduce defects, and (3) altering machines for special uses.

Flightex Fabrics, Inc., Clifton, N. J., throws, weaves, and finishes glass fabrics. [See p. 74 for details of the finishing operations.] Most fabrics are for industrial uses, but experiments on other fabrics and small orders are constantly being woven.

Yarn is received in single plies. Flightex twists it to 2, 3, or 4 plies, all with an average of 6 tpi.

Twisted yarn is then beamed for warps, and each package of yarn makes two warp beams. An average twisted package of 150 (15,000 yds. of single-ply yarn per pound) yarn of 4/2 has 4,200 yds. of yarn. The first warp beam is 2,000 yds. long, and the second is 2,200 yds. Warper speed is 125 to 130 yds. per min.

Size Is Burned Out in Finishing

Beamed warps are sized on a five-cylinder slasher with rubber-covered squeeze rolls. Slasher speed is 30 yds. per min.

Because all sizing must be burned out in finishing, Flightex is careful to use only materials that will burn out completely.

One good sizing formula for slashing glass fibers is:

Cellosize WP-09	20 lbs.
Butyl Cellosolve Stearate.	7 lbs.
Firmtal	14 lbs.
Water.....441 lbs. or 50 gals.	

The water is warmed to 120° F., and the Cellosize WP-09 is added slowly with agitation. After a thorough solution is formed, the other ingredients are added. Then the temperature is brought to 180° F.

During slashing, the size-box temperature is 140° F., pressure on the squeeze rolls is 500 psi., and cylinder temperatures are from size box forward 140°, 180°, 210°, 180°, and 150° F.

Yarn beams for the looms are 24 ins. in diameter. This size beam holds the full 2,200 yds. of most section beams.

Twisted filling is rewound from pirns to loom bobbins on automatic winders. A mill-made motor-operated chute and conveyor belt now carry empty filling bobbins to each winder head and place them in winding position. Formerly the bobbins had to be placed in position by the winder operator.

Because no knots can be tied in glass-fiber yarn, pieces of yarn from the twister and warper are rewound as filling. These pieces of filling are mixed with full bobbins of filling at the looms. Filling bobbins are $7\frac{3}{8}$ ins. long.

Looms are 44- and 64-in. XD with 25-harness dobbies. Loom speed on a $62\frac{1}{2}$-in.-wide fabric is 150 ppm.

Wider Fabrics Are the Trend

The mill recently widened 16 looms from 44 ins. wide to 64 ins. wide to weave the wider industrial fabrics now in demand. All lengthwise parts were replaced with new ones; only the loomsides with end parts and dobbies were reused. One man widened one loom in a total of 40 hrs.

A typical industrial fabric being

woven at present has this construction:

16-harness dobby weave; four of the harnesses form a tape-selvage.

Yarn is 150, 4-ply, 4-tpi. warp and filling.

Other styles are satin weaves and plain weaves.

Cloth is doffed at the loom in rolls that average 10 ins. in diameter. Rolls are 40, 75, 120, and 150 yds. long according to the style.

Double Yardage from Yarn Beams

On very coarse yarn, Flightex has developed a loom yarn-beam setup that gives double yardage at each loom before new beams are added.

Two beams are slashed, each with one-half the required number of total warp ends. At drawing-in, ends are drawn from alternate beams through drop wires, harnesses, and reeds.

Then the two beams are mounted at the loom one over the other just as in a conventional two-beam weave. Both warps run out of yarn together so that two new warps are retied at once.

Warps are replaced by knotting each end loosely by hand. A girl reties all warps and pulls the knots through drop wires, harnesses, and reeds gently.

All Yarns Are Knotless

Because knots will not weave in at looms, no knots (other than in warp retying) are tied in either warp or filling in any department at Flightex. Weavers splice broken ends at looms with plastic splicing fluid.

Filling is carried to each loom by batteryhands. Filling in weaving is identified by different colored tags with numbers that follow it all through throwing. Batteryhands cut tails off filling instead of breaking them off.

The battery thread guide is set forward 20° from the bobbin to help threading the shuttle at the transfer. On very fine yarns, one filling bobbin often weaves 1 yd. of fabric. But on the heavy styles, one bobbin weaves as little as 3 ins.

Loom Parts Are Set Close

All looms have temple-post attachments to hold each pick of filling so that the filling will not pull out selvages.

On fine fabric constructions, rubber-covered or cork-covered temple

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How One Mill Reduced Spindle-Oiling Cost

By transferring spindle-oiling duties to spinning-frame scourers, a cotton mill was able to reduce direct labor cost and improve its yarn quality and production. Specific results—

- **Labor cost for oiling cut $2.25 per frame**
- **Production increase 6,000 lbs. per year**
- **Less yarn spoiled by oily hands**

BY L. E. HART

IF YOUR MILL does not have ball-bearing spindles, you can save money by letting the frame scourers do the oiling while the frame is dismantled for cleaning. Special oilers are not necessary.

This practice is saving our mill $1,125 per year in direct labor cost and has increased production 6,000 lbs. per year.

Before we made the change, our spindle-oiling routine was:

1. **Blow off spindle bases and rails to keep waste from falling into the bolsters**
2. **Break all ends and doff the frame**
3. **Remove bobbins and tapes**
4. **Remove spindles**
5. **Pump out the old oil into a special can and fill bases with fresh oil**
6. **Replace spindles, tapes, and bobbins**
7. **Run the frame a few minutes and piece up ends**

We knew that this system was inefficient and that the installation of ball-bearing spindles would save us a lot of money. (We estimated $15,000 annually.) But our immediate problem was to improve the oiling system in use, since we could not afford new spindles. So here's what we did:

Duplicate Work Is Eliminated

Our scouring procedure duplicated the oiling routine except for refilling the spindle bases with oil. We decided to let the scourers handle the oiling while the frame was dismantled for cleaning. The results were excellent.

The first saving was in direct labor cost. The old method required two oilers who worked 1½ hrs. on each frame. They were paid $1.25 per hr. each, which meant that labor cost per frame was $3.75 for oiling.

With the new method, one man is able to do all the oiling in 1½ hrs. because the frame is already dismantled for scouring. He is paid $1 per hr. instead of the higher rate; so the saving amounts to $2.25 per frame.

We oil 10 frames per week for 50 weeks per year. At this rate, our direct labor cost is reduced $1,125 per year for oiling 500 frames.

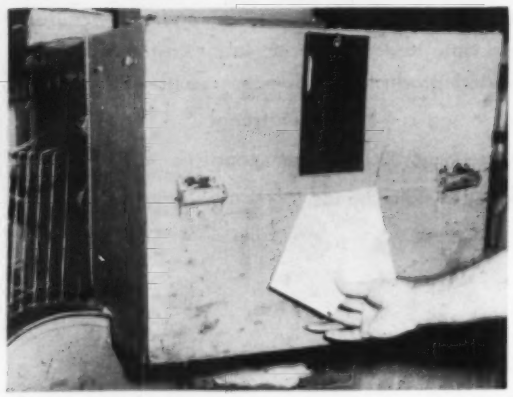
Production Is Increased

Downtime was cut 15 hrs. per week, or 750 hrs. per year. As each frame produces an average of 8 lbs. of yarn per hour, our production automatically increased 6,000 lbs. per year. The increased production represents about $3,500 per year saved by reducing downtime.

Quality was greatly improved. Ends are broken and pieced only once now instead of twice. Frames are doffed only once, and bobbins receive less handling with oily hands.

At Indian Head Mills—

Preventive Maintenance Improves Yarn Quality



MAINTENANCE CHECKLISTS are kept in a special holder on each spinning frame for use by section men, overhaulers, and supervisors.

• Indian Head Mills, Inc., Whitney, S. C., has a preventive-maintenance plan that permits high production of top-quality carded and combed yarn on small-package machinery. Here's how the mill keeps its spinning frames running at peak efficiency—

BECAUSE OF THE SMALL-PACKAGE MACHINERY used in most departments of Indian Head Mills, Inc., extra-careful attention is paid to quality control and preventive maintenance.

This policy has paid off in the production of quality sheets and pillowcases produced in finished form and sold under the mill's well-known label.

Size and weight of sliver and yarn are plotted on a special chart used for control in both the carding and spinning departments. If the weight of either the sliver or yarn fluctuates beyond strict standards, the cause is searched out immediately.

This constant checking on size, backed up by a thorough preventive-maintenance program, saves the mill thousands of dollars annually.

Three Maintenance Forms Are Used

Three printed forms are used to control spinning-room maintenance, and the forms are kept in a special holder attached to each frame so that they can be examined by any interested person at any time.

The first form is a weekly checklist for the section man to fill in and date after he inspects each frame. The report indicates whether or not:

1. Skewers are well pointed and unbroken
2. Top clearers are in good condition and in place
3. Top rolls are in good condition, and front rolls are the same size
4. Saddles are unworn and of the proper length
5. Stirrup is in the notch, and the weight and screw are set properly
6. Weight levers are level and of the proper length
7. Steel-roll necks are in good condition
8. Lap sticks are in good condition
9. Roving traverse is properly set and working.
10. Proper-size top-roll weight and cap weights are in place
11. Ring rail is level and at the right height
12. Lifter rods are unworn and clean and straight
13. Lifter-rod bushings are unworn or loose in the base rail
14. Counter weights are in proper position
15. Separators are spaced, level, and tight
16. Bobbin build, stroke, pick, and bottom form are correct
17. Builder motion is free and has no worn parts or loose cams
18. Bunch builder and knock-off on filling are working

Monthly Report Is Made

The second form, a monthly inspection report also for the section man, indicates whether or not:

1. Creels are level and properly spaced and steps are uncracked
2. Roving rods are level and in good condition
3. Weight hooks are unworn and washers are in place
4. Cap bars and nebs are unworn
5. Cap bars are set at the proper height
6. Thread guides are level and unworn
7. Doff guards are all in place
8. Traveler cleaners are in position and set

Overhauling Routine Is Strict

The third form, for the overhauler, shows all the repairs, replacements, and inspections he makes at each frame. The signed and dated list indicates:

1. Spindles are properly plumbed
2. Spindles changed
3. Bolsters changed
4. Rings changed
5. Steel rolls are clean
6. Steel rolls replaced
7. Aprons replaced
8. Steel rolls are set
9. Front rolls are buffed
10. Back rolls are buffed
11. Frame is level and aligned
12. Lap sticks replaced
13. Journals replaced
14. Bearings replaced
15. Worn gears replaced
16. Lost motion is checked
17. Backlash is checked
18. Worn studs replaced
19. Gears are clean
20. Number of teeth in:
    a. Draft gear
    b. Break-draft gear
    c. Twist gear
21. Belts are checked
22. Other repairs

200-Mill Survey Shows Cotton-Mill Waste Down 4.9%

• Cotton-mill processing waste has been going down since 1933 because of improved fiber properties, better machinery, and increased waste consciousness on the part of mill personnel. Range of waste removed is from 9.5% in sheeting mills to 25% in combed-cotton mills.

COTTON-MILL WASTE is now 4.9% less than it was in 1933. Reductions range from a high of 13% for combed wide sheeting to a low of 1.25% for huck toweling. Print-cloth waste is down 2.5%. Other waste figures are shown in the accompanying table.

These facts are from the recently completed industry-wide survey of cotton-mill waste made by the Utilization Research Division of the National Cotton Council under the direction of Robert V. Miraldi. Over 200 mills with more than 10-million spindles were surveyed.

An analysis of the findings shows that fiber properties have a great deal to do with the amount of waste removed from cotton at the various steps in processing.

Grade undoubtedly exerts the greatest influence on waste of all fiber properties. But while grade has declined generally since 1928, except for a leveling off in 1946, the quantity of fiber removed has been gradually decreasing. This condition may appear paradoxical, but improvements in other fiber properties have tended to offset the adverse influence of grade on waste.

Maturity has remained generally level except in 1949, when the crop was exceptionally mature. This property is ranked second only to grade among factors affecting picker and card waste. Mature cotton produces less waste.

Tensile Strength Is Up

Tensile strength has had an upward trend for the last 10 years or so. There is some evidence that stronger fibers produce slightly more waste in the earlier processes; but this loss is offset by better running qualities from roving through weaving.

Cotton has been gradually getting finer over the years, but there is no clear pattern of the effects of fineness on waste. The same thing goes for the gradual increase in upper-half mean length that has been taking place.

Improvements in strength, maturity, fineness, and other properties indicate that the waste picture will continue to improve in the future.

[The complete waste report, which breaks down waste percentages in each department and describes machinery organizations of all the mills surveyed, is available in the form of a 60-page book published by the National Cotton Council of America, Memphis, Tenn. The print-cloth portion of the survey and other preliminary findings were published in TEXTILE WORLD, *June '57, p. 100.—*EDITOR*]*

Average Waste Losses for 25 Fabrics

(Excluding Bagging and Ties)

Fabric	1933 Study	Current Study	Difference
Soft filled sheeting	15.00%	10.50%	– 4.50%
Class A sheeting	15.00	10.50	– 4.50
Class B sheeting	15.00	9.50	– 5.50
Class C sheeting	15.00	10.50	– 4.50
Poplin and gabardine	14.50	10.75	– 3.75
Twills	15.00	10.75	– 4.25
Drills	15.00	10.50	– 4.50
Wide sheeting	14.50	10.50	– 4.00
Print cloth	14.50	12.00	– 2.50
Diaper cloth	14.50	9.75	– 4.75
Tobacco and cheesecloth	14.50	10.75	– 3.75
Carded broadcloth	14.50	11.50	– 3.00
Denim	16.50	12.25	– 4.25
Other colored-yarn fabrics	.....	12.25	.....
Terry toweling	14.50	12.25	– 2.25
Huck toweling	15.00	13.75	– 1.25
Flannel	17.50	10.75	– 6.75
Combed lawn	33.00	25.00	– 8.00
Other combed fabrics	.....	23.50	.....
Combed sateen	33.00	24.00	– 9.00
Combed wide sheeting	33.00	20.00	–13.00
Drapery and upholstery	.....	13.25	.....
Corduroy	17.00	11.00	– 6.00
Numbered duck	.....	12.75	.....
Other ducks	.....	10.50	.....

FABRIC CLASSIFICATIONS are weighted according to their annual production so that the influence of high-production cloth does not overshadow small-production items.

Textile Automation—

Enka's New Slasher Controls Record Slasher Downtime

American Enka's results from a new slasher-control system look like a sheet torn from an electronics catalog. From one central chart, Enka—

- **Controls moisture in warps within 0.25%**
- **Records the content for five slashers**
- **Has a running record of slasher downtime**

THE SLASHER RECORDING in the picture below looks much like that from any common recorder. But instead of recording the moisture regain of only one slasher, this one records both the moisture regain and slasher downtime for five slashers on one circular chart.

This instrument installation is at American Enka Corp., Enka, N. C. With it, a slasher operator can see clearly (1) his production lags for each slasher and (2) when and how long they occurred.

The multirecord recorder is equipped with a special apparatus and moisture controls that permit the recorder to track down the moisture and downtime in special zones and in individual colors on the chart.

At Enka, the recorder is located centrally in the group of five slashers so it can be checked frequently by operators and supervisors. But it can just as easily be located a long distance from the slashers in the plant manager's office or at any other point.

Daily chart work at Enka is reduced to one-fifth, and interpretation is easier. Supervisors see at a glance a great amount of needed data.

Robert W. Kirby of Enka's plant engineering department says, "We have made steady progress with the new instruments. And although the five slashers run 100 to 105 yds. per min., the big advantage is in yarns of constant 11% moisture regain.

"There's also less maintenance than on old instruments. Two slasher tenders operate three slashers as before, but their jobs are easier now."

Enka slashes Tyrex yarns usually beamed 152 to 160 ends per beam. Yarn ends come from individual cones at a creel.

The yarn sheet goes through two sets of squeeze rolls in the size box. Then it's dried on 11 slasher cylinders. A slasher delivers four slashed beams at once on normal warps.

MOISTURE AND DOWNTIME from five slashers are recorded on one circular chart. The over-all apparatus tracks down the moisture content and downtime of individual slashers and shows the results in separate zones and individual colors on the chart.

Warp Regain Is Within 0.25%

Warp quality at Enka is very important. Therefore the mill uses the new controls with fast-acting trigger tubes set to operate promptly when the warp deviates from the 11% regain desired for viscose rayon. The control limits are adjustable and are set to ±0.25% regain.

Enka makes speed corrections with four motor-driven timers, each calibrated directly in seconds and each easily adjustable over a wide time base.

The first timer is a start relay. The slasher maintenance man sets it to a specific time between 0 and 3 mins. During this time, the control does not make corrections immediately after a slasher is started.

At the start-up, the warp is always virtually dry since it has been in contact with the hot cylinders for an extended length of time. The control compensates for this condition to prevent increasing the slasher speed, which would deliver a wet warp.

The maintenance man watches a red-marked pointer on the start-delay timer as it clocks the start-up time. Then he sets it so that the pointer reaches zero just after the moisture rises rapidly on the indicator; this warp section is freshly slashed and not overdryed.

When the start-delay time has run out, the control begins to make speed changes as warp drying varies. But the control does not make unnecessary speed changes. For example if a cut mark or temporary wet spot comes through, it's not desirable to change the speed and then make a second

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Textile World

CHEMICAL TREATMENT AND FINISHING

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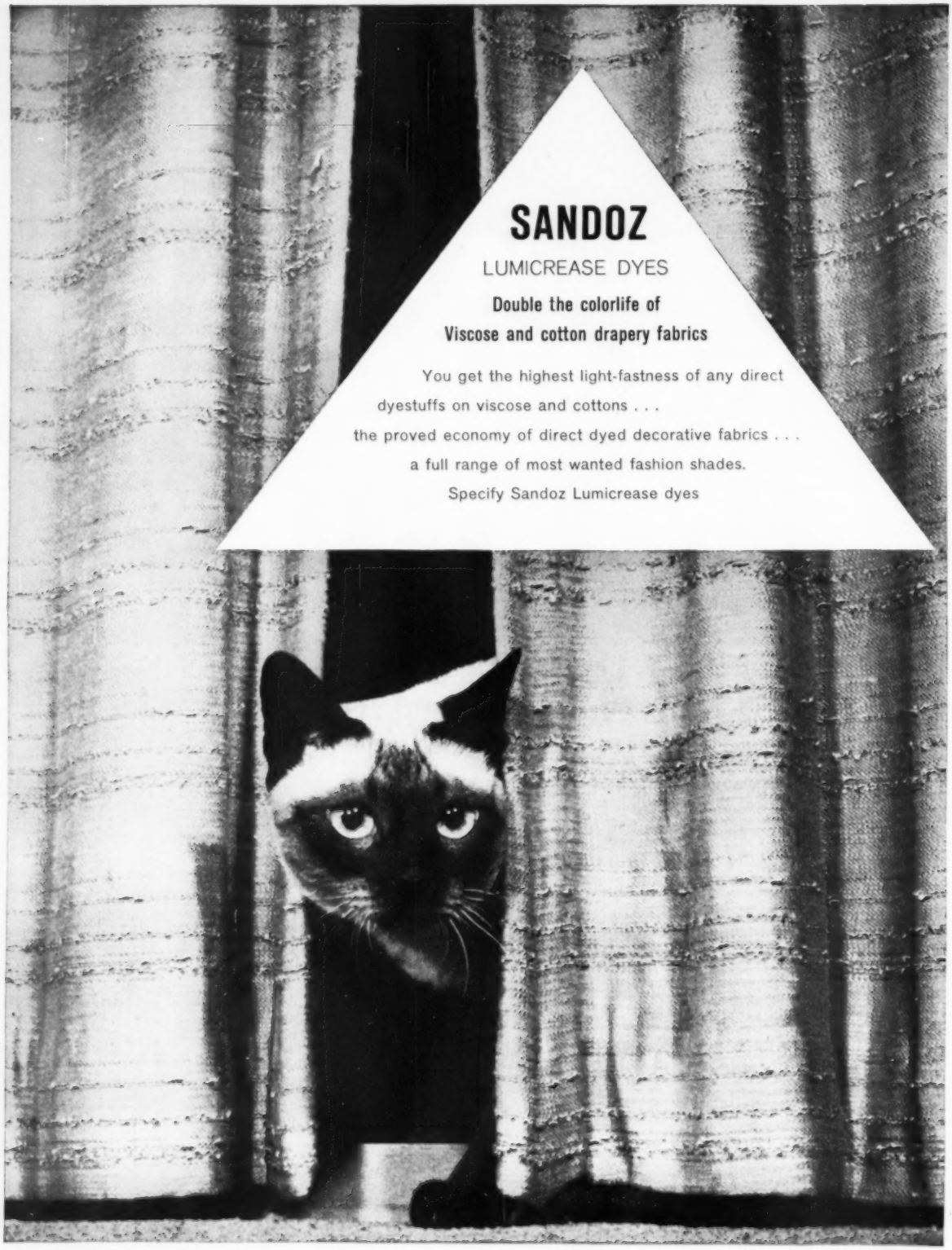
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Photo by Walter Chandoha

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Wash-and-Wear Needs Reviewed—

Sydney M. Cone, Vice President, Cone Mills Corp., summed up the good points and listed the imponderables concerning resin finishes before the meeting of the Textile Quality Control Association at Raleigh, N. C., late in March.

Pointing out that reduced tensile and tear strengths do not necessarily result in unsatisfactory wearing qualities, Mr. Cone said that some observers have reported that both domestic and apparel fabrics actually wear longer when they are properly resin finished.

The reasons for such anomalous behavior are still somewhat obscure but are tied in with the surface effects created by the resin, the presence of resin in the amorphous areas of the fiber, and reduced fiber-to-fiber friction during the laundering process.

By raising the count and changing the ratio between warp and filling threads, many standard fabrics have been given improved performance characteristics when they have been resin finished.

Much work remains to be done in the fields of preparation of goods and aftertreatments and in finding out which types of cotton are best suited to resin finishing.

Mills are now faced with the problem of providing fabrics suitable for resin finishing within specific areas of use rather than weaving goods on an all-purpose basis.

Another contradiction to usual mill practice is showing up in the fact that lower-twist yarns, generally considered to be weaker than higher-twist comparably sized yarns, are better for resin finishing. This switch comes from the fact that the low-twist yarns absorb more resin, and less resin pickup is needed to produce a wash-and-wear finish. The end result is a more-flexible fabric that wears better.

At present, Mr. Cone continued, the matters of fabric geometry and materials and methods as they apply to wash-and-wear still require a good deal of study before the ideal combination of fabric, chemical treatment, and satisfactory performance from all angles can be achieved.

New Colors for Glass Fabrics—

Last month, Union Carbide Corp. announced a new dyeing process for glass fabrics that provides a wide range of deeper, brighter colors for these materials.

The Silrama process, as it is called, was developed by Carbide's Silicones Div. Gagliardi Research Corp. acted as consultants during the development period. Selected dyes and pigments from practically all classifications can be used with the new method.

The color is fixed to the glass fiber by mixing it with a special silicone compound that has affiinity for glass and that becomes fixed to it during the drying and curing processes.

Early trials indicate that the colors produced in this way on glass fabrics have as good lightfastness as would be expected from normal dyeings with the same dyes. The glass fabrics may be washed repeatedly with soap or detergents without noticeable loss of color.

Crocking is not a problem, and the colors are fast to the solvents usually used by drycleaners. The principle involved in the process has potential applications in dyeing and printing other man-made fibers, asbestos, wood, paper, and inorganic materials.

Carbide is offering the process to the industry on a licensing basis. J. P. Stevens & Co., the first licensee, will make introductory showings of glass fabrics in the new colors early this month.

Cold-Cure Water Repellents for Wool—

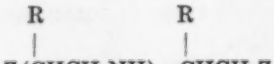
A new development in silicone water repellents for wool permits curing the silicone at a relatively cool temperature, say 200 to 212° F., according to British Patent 802,540 to Midland Silicones Ltd.

The water repellent is applied by the exhaustion method from a cold bath at pH 4 to 6. The bath is made up with the silicone compound, a nonionic emulsifying agent, a substantive polyimine, and a catalyst such as triethanolamine titanate.

The silcone mixture preferably contains 60%

of a copolymer of trimethylsiloxane and methylhydrogensiloxance and 40% of a dimethylpolysiloxane.

The polyimine should conform to the general formula:



in which Z is an NH_4 group or a halogen atom, R is a hydrogen or methyl radical, and x is an integer of at least 4. Such polyimines can be made from ethylene diamine and propylene diamine.

The function of the polyimine is to promote spontaneous uniform deposition of the silicone on the surface of the wool fiber. The triethanolamine titanate improves the water repellent without having in itself any water-repellent qualities [TEXTILE WORLD, April '59, p. 87].

Dye Fixatives Have Antistatic Properties—

Excellent antistatic properties can be imparted to hydrophobic fibers by certain colorless dye fixatives, according to recent German reports. The compounds are formed by quaternizing basic vinyl polymers or monomers. Suitable basic vinyl monomers include N-vinyl-2-methylimidazole, N-vinyl-2-phenylimidazole, and 2-vinylbenzimidazole. Vinyl pyridines such as 2-vinyl pyridine may be used.

The basic vinyl compounds are easily quaternized with such agents as dimethyl sulfate, ethylene chlorhydrin, and mono-alkyl sulfates or esters.

The antistatic agents may be applied as aqueous emulsions by spraying or by adding them directly to yarn- or fabric-treating baths.

Peroxide Behavior Studied—

Stabilization with disodium phosphate and calcium chloride improves the performance of peroxide bleaching baths.

In a study made by David M. Cates, Asst. Director of Chemical Research, N. C. State College School of Textiles, it was also found that the unstabilized baths had little bleaching or damaging effect on the cotton.

The condition of the cotton at the time of bleaching was found to affect the rate of decomposition of peroxide baths. Cotton that had been scoured and then treated to remove traces of metals was less active in decomposing the peroxide. Whites were better for treated cotton than for cotton that had been scoured only.

Damage to the treated cotton was higher than for untreated cotton; but in terms of reflectance value per unit of viscosity reduction, the treated cotton was less damaged.

Time and temperature were also found to be important in affecting the rate of decomposition of both stabilized and unstabilized peroxide solutions. These factors also affect the reflectance value and extent of chemical damage.

Treatment for Sulfur-Dye Waste Liquor—

Waste liquors from sulfur dyeings can be deodorized and bleached out by a method disclosed in U. S. Patent 2,877,177 to J. B. Story.

The waste liquor is intimately mixed with a sulfurous-acid solution in a molar ratio of 1.1 to 1.7 parts of sulfurous acid to 1 part of the waste liquor. The initial pH of the mixture is 6.7 to 6.9. A coagulate phase and an odorless and colorless liquid phase are formed in the process, which are subsequently separated for disposal.

Added Uses for Organo-Tin Compounds—

Organic compounds of tin are already finding uses in protecting acrylic polymers from discoloration by light and heat.

Recent research by the International Tin Research Council in London has disclosed that such compounds also have mothproofing qualities for wool and also inhibit rotproofing in cellulosic materials.

Trialkyl tin compounds are superior to the mono-, di-, and tetra-alkyl forms in mothproofing

applications. Tributyl tin is very effective against moths and carpet beetles but is less durable to leaching than a leading proprietary product or DDT.

Cotton is protected against rotting by diethyloctyl tin acetate and diethyllauryl acetate, about to the same extent provided by mercury-bearing fungicides that are commercially available.

The tin compounds do not leach. Dimethyloctyl tin and dimethyllauryl tin acetates are actually substantive to cotton and compare in their rotproofing effect with copper naphthenate.

New Unshrinkable-Wool Finish—

A combination of peracetic acid or permono sulfuric acid and sodium hypochlorite has been found to produce a high degree of shrink resistance in wool fabrics.

The Wool Industries Research Assn., Torridon, Leeds, England, is promoting the patented process.

A typical procedure involves treating 100 parts of wool hosiery in 3,000 parts of a solution at 15° C. that contains 2.4 parts peracetic acid, 3 parts of an anionic wetting agent, and 6.2 parts of sodium hypochlorite (equivalent to 1 part of chlorine).

The goods are soaked in the solution for 30 mins. and then are antichlored with sodium bisulfite, rinsed, and dried.

The process is claimed to produce hosiery that will not shrink after repeated launderings in even dolly-type washing machines.

Copolymers Improve Pigment Binding—

Unsaturated vegetable oils such as China wood or dehydrated castor oil combined with polymerized or polymerizable vinyl compounds are the bases for an improved pigment binder developed in Switzerland.

In a typical print paste, an oil-in-water emulsion is made up that contains 8.3 parts of vinyl alcohol, 6 parts of China wood oil, 10 parts of a 20% paste of blue copper phthalocyanine pigment, and 1 part of an emulsifying agent.

After the goods are printed, they are dried and then cured at 130° C. for 10 mins. The graft copolymer formed from the oil-vinyl reaction produces a tough but flexible film that binds pigment to fiber to give excellent fastness to washing and crocking. The binder is effective on cotton, rayon, acetate, and silk fabrics. (British Patent 810,261 to Sandoz Ltd.)

Did You Know . . .

. . . that 10 or more crimps per centimeter can be set in polyester fibers if they are first passed through a 5% emulsion of chloroform at 50 to 60° C., according to British Patent 808,967?

The fiber in tow form is led through the emulsion and into a crimping machine. The crimping occurs within 3 mins.; so the process can be set up for continuous operation.

Other chlorinated hydrocarbons can be used in place of chloroform. The emulsifying agent is preferably a fatty-acid polyethylene-glycol condensation product. The emulsion is more effective than a 100% solvent treatment would be.

The method increases extensibility by 50% and shrinks the fibers 25% without reducing tensile strength appreciably.

●

. . . that rayon staple in lap form is being dyed continuously with reactive dyes? Imperial Chemical Industries Ltd. developed the method, which is based on saturating the lap with the reactive dyes in a padder, drying at 100 to 120° C., and then washing the lap to remove unfixed dye and alkali. The dye liquor is made up with the reactive dye, sodium bicarbonate, and a wetting agent. The heat of the drying oven converts the bicarbonate to the more active carbonate necessary to fix the reactive dyes.

The brilliance and good fastness properties of the shades produced in this way are expected to offer competition to pigment-spun yarns or at least to broaden the range of shades available in dope-dyed rayon staple.

. . . that dark edges that develop in jig dyeing with vat dyes are a function of partial oxidation? Air is entrapped in the goods as they are rolled up and is more active near the edges of the roll than toward the middle. The dye becomes fixed, and on the next end the cloth is able to pick up more color in the oxidized areas than in those areas that have not been affected by air.

The end result is often badly listed goods. The condition can be helped by working the goods in a 1 to 2% solution of Solidegal GL at 180 to 190° F.

●

. . . that optical whiteners that are included in most detergents today may cause a faded effect on some light shades?

Yellows are particularly susceptible to this effect because the blue fluorescence overcomes the intensity of yellow light reflected from the fabric. Pinks, blues, greens, and grays all appear considerably bluer if optical brighteners are used in laundering fabrics dyed in pastel shades. The effect could cause consumer complaints.

NEW DYES AND CHEMICALS

Nylon Dyes

Nylomine . . . brands a range of anionic dyes developed especially for dyeing nylon. Nine colors are available at present: Blue GS, Blue R, Dark Blue B, Yellow GS, Orange GS, Red 2BS, Scarlet B, Brown B, and Black BS.

The dyes are compatible with each other and all have good fastness to light and washing. Wetfastness can be improved by aftertreatment.

The colors build up well and can be applied to stock, yarn, or piece goods. Arnold, Hoffman & Co., Inc., 55 Canal St., Providence, R. I.

Circle D-1 on Reader-Service Card

Defoamer

Antifoam . . . is a silicone-bearing defoaming agent that is effective in low concentrations in finishing, printing, or dyeing operations.

The product works at high or low temperatures, and its use promotes rapid foam dissipation. Soluol Chemical Co., Natick, R. I.

Circle D-2 on Reader-Service Card

Direct Dye

Pyrazol Fast Blue BGUL . . . offers minimum shade change when dyeings are aftertreated with resins, fixing agents, or combinations of both.

Fastness properties are unusually good, and the color is being recommended for the economical production of full shades of blue on cotton and rayon. Sandoz, Inc., 61-63 Van Dam St., New York 13, N. Y.

Circle D-3 on Reader-Service Card

Flocking Adhesive

Resgrip WP . . . a nonflammable, quick-drying flocking adhesive can be applied by machine or silk screen. The product dries soft and transparent and is nonstaining. Articles that have been flocked with the adhesive can be washed at the boil or drycleaned. Adhesive Products Corp., 1660 Boone Ave., New York 60, N. Y.

Circle D-4 on Reader-Service Card

Basic Intermediate

Aminoethylethanolamine . . . is offered as an intermediate for the production of scouring and wetting agents, detergents, and dyeing assistants. It is also suggested as a component of softeners and water repellents. Dow Chemical Co., Midland, Mich.

Circle D-5 on Reader-Service Card

Water Repellent

Wicapel 100 Conc. . . . is a water-repellent compound based on thermosetting resins. The product provides durable water repellency to cotton, rayon, and blends of man-made fibers. Only minimum add-on of the material is necessary, and application is by means of standard processing machinery. No afterwashing is necessary. Wica Chemicals, Inc., P.O. Box 506, Charlotte, N. C.

Circle D-6 on Reader-Service Card

Scouring Agent

Synthrapol SP . . . is recommended for afterwashing fabrics that have been dyed with reactive, vat, or azoic colors. It is especially effective in removing the unfixed color byproducts that are formed with reactive dyes and water. Arnold, Hoffman & Co., Inc., 55 Canal St., Providence, R. I.

Circle D-7 on Reader-Service Card

Fiber Lubricant

Twitchell 7440 . . . provides antistatic properties and lubrication to all natural and man-made fibers.

The product is water soluble and is readily scoured out. Resistance to light, yellowing, and storage conditions is good. Suggested applications include use in high-speed wool and worsted processing and for processing blends of natural and man-made fibers. Emery Industries, Inc., Dept. 5, Carew Tower, Cincinnati 2, Ohio.

Circle D-8 on Reader-Service Card

HARSHAW UVERSOFT "D"

imparts soft hand with little reduction in moisture absorbency

● UVERSOFT "D" is a cationic surface active agent which produces a full, soft hand with little, if any, reduction in moisture absorbency of the TREATED material. It can be exhausted from a long bath, and has an excellent retention in an aqueous system. UVERSOFT "D" provides a maximum economy in application and use.

UVERSOFT "D" is an outstanding anti-static agent. It should be considered for situations where the accompanying softening action is not objectionable.

Send for folder containing complete technical information.

THE HARSHAW CHEMICAL COMPANY ● **1945 East 97th St., Cleveland 6, Ohio**

Send me TECHNICAL BULLETIN ON UVERSOFT "D"

My Name_____

Company Name_____

Street Address_____

City_____ Zone____ State_____

For more data, circle A-33 on Reader Service Card

How Flightex Finishes Industrial

Two primary steps are necessary to produce industrial glass fabrics that will be suitable for resin bonding. They are—

- **Thorough removal of all organic matter**
- **Application of an intermediate coupling agent**

Flightex Fabrics, Inc., Clifton, N. J., carries through on its manufacturing operation [p. 62] by cleaning and preparing the fabrics for further processing.

Flightex produces glass fabrics in a variety of weights ranging from 5 lbs. per 100 yds. to 2½ lbs. per yd. that go into filter presses, boat manufacture, and electrical insulation. These fabrics are made from glass yarns that have been treated with a binder composed of starch and mineral oil to protect them from the mechanical operations of weaving.

The binder must be removed and the weave of the fabric set as the first step in the finishing operation.

After the goods are inspected in the gray, they are batched up into 200-lb. rolls on perforated-steel cylinders. The batches are then mounted on portable steel racks.

Controlled Heat Cleans Fiber

The loaded racks are run into a heavily insulated gas-fired oven where they are kept at a temperature of 650° F. for 60 hrs. During this time all the organic matter that is contained in the sizing compound is vaporized, and the glass fabric is ready to be finished.

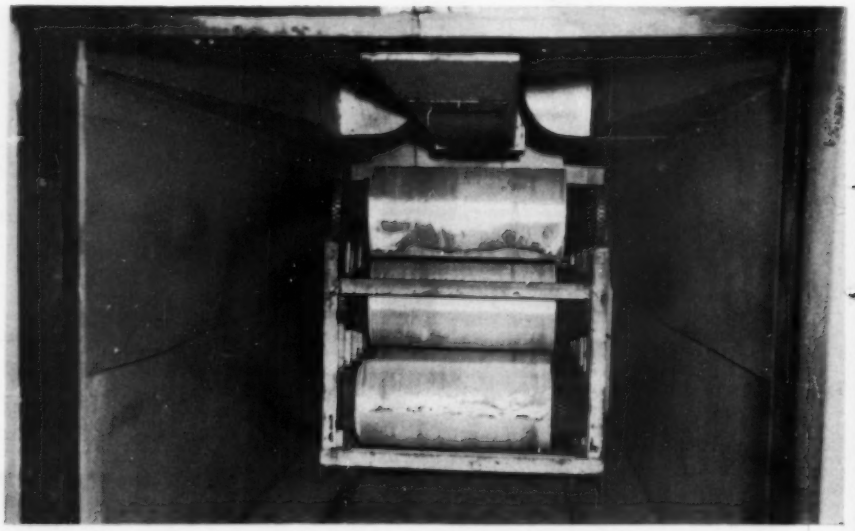
Glass fabrics that are to be combined with polyester or epoxy resins for the manufacture of boats and other glass-plastic products must be treated to get good adherence of the resin to the glass.

For this purpose Flightex uses a methacrylic acid-chromium complex that adheres well to glass and at the same time has a reactive organic group that will combine with a wide variety of resin formers such as those containing vinyl, allyl, and methacryl groups.

How the Finish Is Applied

The methacrylato-chromium chloride compound is received as a solution containing 19 to 21% active material. This base is diluted with water to form a solution that contains ½ to 2% of the base. More or less may be required for some fabrics.

The solution is very acid (pH 1.8) and is neutralized in part before use by adding diluted ammonia carefully until



GLASS FABRICS wound in 200-lb. rolls are heat-treated in this gas-fired oven to remove organic matter.

the pH stands at 5 to 6.

The goods are immersed in this solution in a heavy pad. Flightex does not use the pad in the usual way. The nip is left slack and excess solution is removed by a vacuum slot set up between the pad and the dryer.

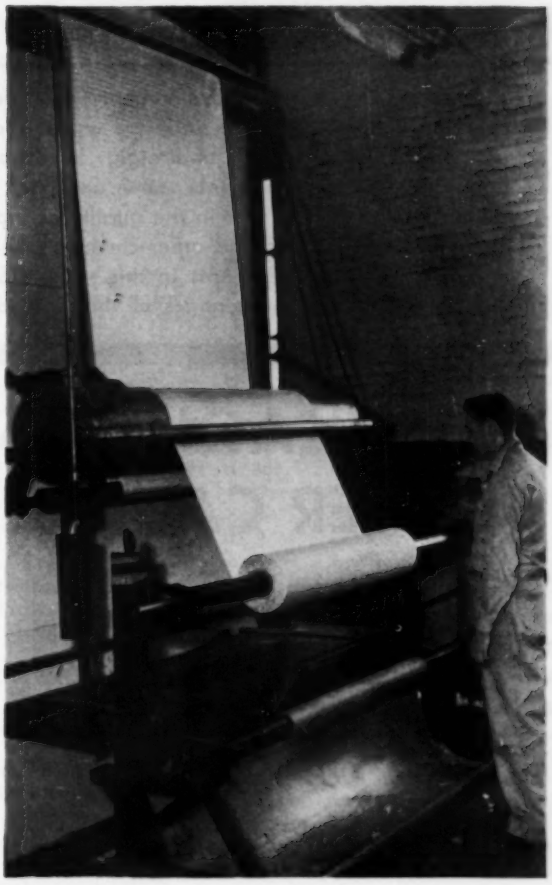
The drying operation is done in two stages. A neutralizing wash between two drying cabinets removes any acidity left in the goods. The drying cabinets are four-pass gas-fired roller-type ovens that are thermostatically controlled. The first oven is set at 350° F., and the second operates at 400° F.

How the Chromium Complex Works

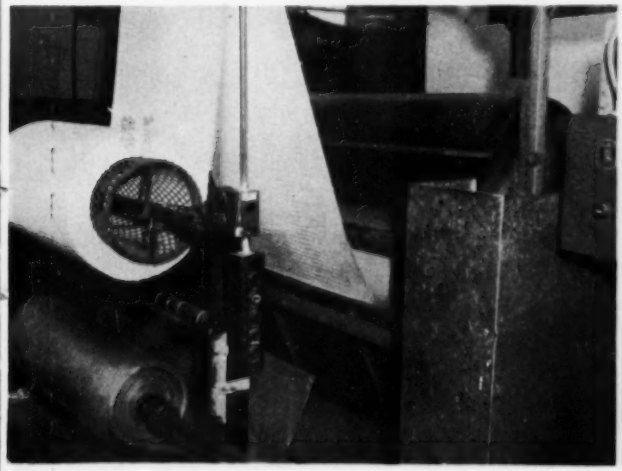
The organo-chromium complex ionizes in dilute solutions and apparently produces free Cl^- ions in much the same way as chromic chloride. This situation leaves Cr-OH groups that in dilute solutions tend to form water-soluble polymers.

If the chromium complex solution is applied to a clean glass surface, there is interaction between the chromium atoms and the SiO_2 of the glass. Under ideal conditions, this type of bonding leaves the unsaturated groups free to combine with the resins that are commonly used in fabricating glass-resin products.

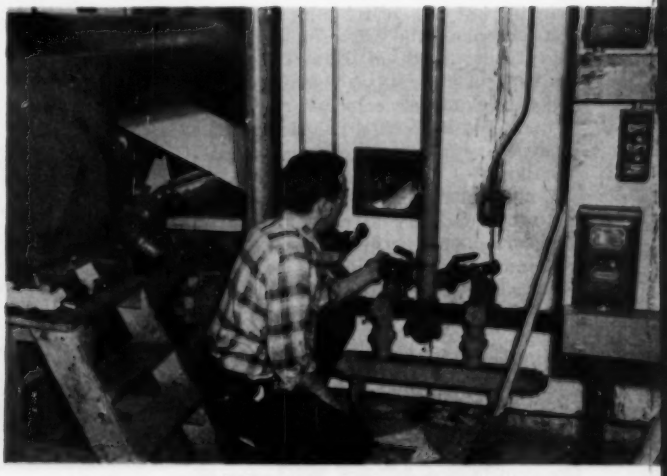
The finished glass fabrics have a slight greenish cast that is caused by the chromium component of the finish. No further processing is necessary for the end uses to which this class of goods is put.



FINISHED GOODS are rolled and inspected as they come from the second dryer.



GOODS are saturated in a chrome-complex solution in this pad. No nip is used, but excess liquor is removed by vacuum.



GLASS FABRICS pass from pad over vacuum slot (arrow) into first drying cabinet.

DOW | **Chemicals**

make textile news and profits

To report in detail all developments in all fields of chemistry that affect the textile industry would require a good sized press, running day and night. Here you find highlighted a few developments, new and old, about seven chemicals that play a part in the quality or production costs of textiles. Other facts and other chemicals will be covered in subsequent advertisements in this series. To keep in the know, keep tab on both pages of this and following ads.

You may wish to check certain items in this advertisement and forward to those concerned in your company.

ROUTE TO:

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PLAQUEMINE . . . 5+9= BETTER CAUSTIC SODA SERVICE

Completed only last October, the plant at Plaquemine, Louisiana, is already giving textile men (who realize the importance of assured source of supply) reason to double-check their present sources.

Using ultra-modern equipment and methods, this multimillion dollar installation brings to five the number of caustic soda production plants operated by The Dow Chemical Company. With the nine Dow shipping terminals, it brings to fourteen the number of points from which top quality caustic is available for immediate delivery.

The advantages to textile men are many, both now and in the future.

In the last two years, quiet plantation land along the Mississippi River, thirty miles north of New Orleans, has been changed to a teeming spic-and-span industrial center where caustic soda and other vital chemicals are produced with modern efficiency and precision.

Dow cordially invites members of the textile industry to pay a call at Plaquemine and personally view this new source for many important textile chemicals. The effective use of natural resources appeals to the efficiency-minded: natural gas, piped from nearby fields, furnishes fuel for power and heat; water for cooling and processing is readily available from the Mississippi as it flows by the door. It is something worth witnessing: every requirement for efficient production of the finest caustic soda is concentrated here in one plant.

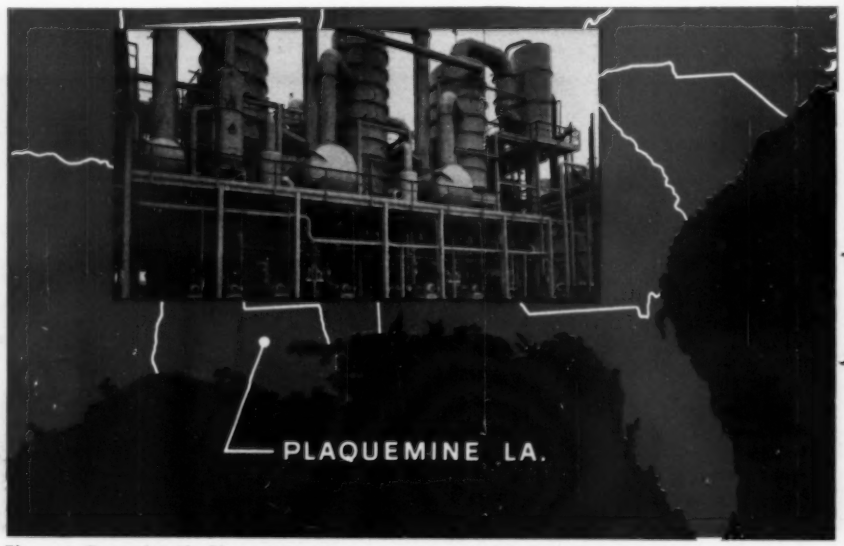
Textile management: the long view. A poll of men in textile mills, both large and small, will make these things clear:

- A dependable shipping source for caustic soda is important for efficient inventory control and economical manufacture.
- A dependable manufacturing source for top quality caustic soda is essential for long range planning. Regardless of what may develop nationally or internationally, a *sure* supply is necessary.

With five production plants—located in Michigan, Texas, California, Ontario and now Louisiana—Dow provides the best possible answer to the question of assured supply. And Dow's nine shipping terminals—each completely stocked and staffed for fast delivery—furnish a time-tested solution to the problem of dependable delivery.

In planning ahead, the textile executive finds there is another important consideration: Dow is widely accepted as the reliable source of supply for caustic soda in every form—50% and 73% solution, standard flake, solid and ground forms.

New basic guide for NaOH buyers. The comprehensive Dow Caustic Soda Handbook discusses properties of



The new Dow plant in Plaquemine, La., produces quality caustic soda, used by textile mills for kiering, for bleaching and mercerizing, for changing the "hand" or feel and producing a sheer finish.

NaOH, its uses, forms, shipping and handling data, and methods of analysis. Everyone in the textile industry connected with the use of this basic chemical should have a copy. Ask your Dow sales representative for your copy, or write Dow.

• Boon to cotton fabricators

Even whites resist wrinkles with EDA 98%

The latest improvement in ethylenediamine resins enables mills to fabricate cottons in pastel colors, even white, so they are not only wrinkle-resistant, but have excellent wrinkle recovery properties. Higher color retention in the finished fabrics, along with improved dimensional and storage stability, may also be obtained using EDA-derivatives.

The product that makes this possible is EDA 98%, pioneered by The Dow Chemical Company. Its quality and purity surpass anything previously achieved, making it the ideal base for ethylenediamine resins used in treating finished cotton. So pure, you can look through a bottle of EDA 98% almost as easily as through a plate glass window. This purity pays off with any cotton fabric but especially light colored or white fabric where true, pure tones are required for the important high style market which includes dress shirts, blouses, summer dresses and skirts.

The greatly improved resins from high quality EDA, the result of years of extensive research in the Dow laboratories, are attracting the attention of foremost cotton fabricators both in this country and abroad.

Dowicide preservatives help prevent damage in goods subject to mildew and rot.

• Dowicide G . . .

Textiles get an assist from chemistry

The preservation of starch solutions used by textile mills for warp sizing took a long step forward with the discovery of Dowicide® G, one of a family of industrial preservatives developed for the control of bacteria and fungi. Dowicide G (technical sodium pentachlorophenate) added to starch sizing prevents breakdown in vats and stops mildew damage in gray goods. By eliminating mildew, this modern preservative marks up a double savings. It saves fabricating time. And it saves the extra costs created by increased bleaching that's caused by mildew damage. Dowicide preservatives also effect important savings by preventing mildew and rot in carpet yarns; resisting rot in rope and bale twine and coated burlap; as well as preservation of cotton, rayon and silk yarn. Dow has experience-in-depth with each of these applications—you are invited to write for detailed information on your particular problem.

★ ★ ★ ★

LEARN MORE ABOUT CHEMICALS that are advancing textile production, reducing production costs. Dow is an authoritative source for information about textile chemicals as well as a reliable source for the chemicals themselves. Write THE DOW CHEMICAL COMPANY, Midland, Mich., Chemicals Sales Dept. 981FE5.

NEWSWORTHY NOTES

on other chemicals of interest to the textile industry

DOWANOL. Latest information about the most complete line of glycol ether solvents for dyeing is in a free folder and booklet on Dowanol® products.

GLYCOLS. Mono-, di- and triethylene glycol are three industrial glycols proved outstanding as fiber lubricants and as snagging or drying preventatives.

CHELATING AGENTS. Textile men use Dow triethanolamine to reduce iron staining; Versene®, Versenol® and Versenex* for other cost-cutting applications.

*TRADEMARK

DOW LATEX. In many applications, from carpet backing to hair-pad binding, Dow Latexes are cutting costs and providing improved product features.

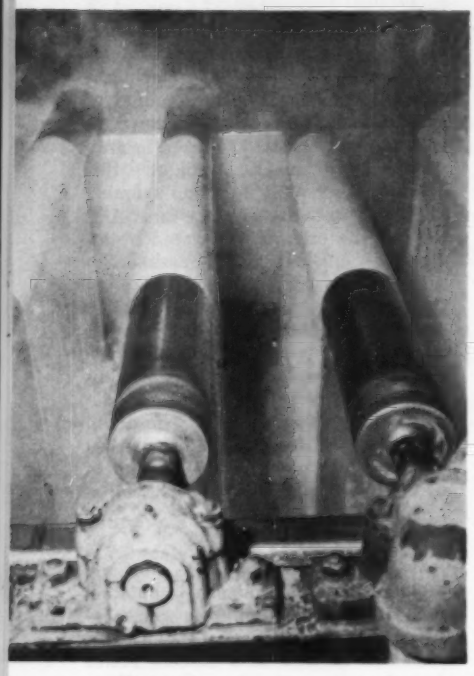
DOW CHEMICALS BASIC TO THE TEXTILE INDUSTRY

Chemical Raw Materials
Bleaching Chemicals
Preservatives • Plasticizers
Glycols and Derivatives
Methylcellulose • Emulsifiers
Solvents • Aromatics
Caustic Soda
Muriatic Acid • Latexes
Chlorine • Soda Ash

THE DOW CHEMICAL COMPANY
Midland, Michigan

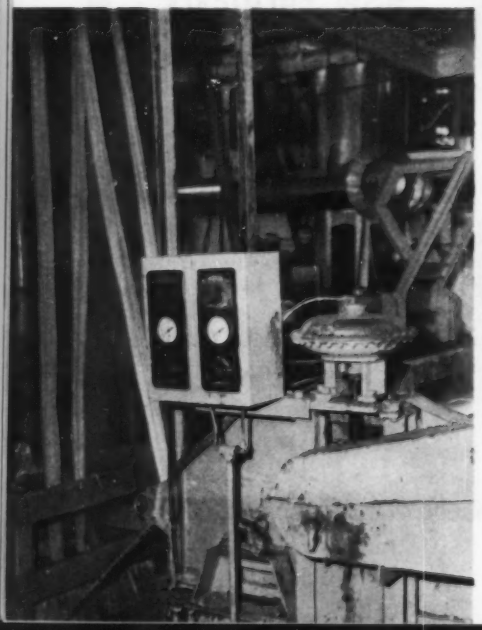
DOW

A Look at Processing In Lowell Bleachery South



THIS VIEW of an open-width wash box shows the unusually active motion of wash water that is caused by the elliptical rollers in the bottom of the box.

DOUBLE STRAND of huck toweling leaves the second stage of the peroxide-bleaching range to enter the first of two slack washers.



Lowell Bleachery South is a subsidiary of Dundee Mills, Griffin, Ga. The plant's production is divided roughly into two-thirds for Dundee's production and one-third for commission work. Features of the operation include—

- **Two continuous bleaching ranges**
- **Modern dyeing equipment**
- **A complete towel-fabricating plant**

GOOD MACHINERY, good methods, and an eye for any new developments in processing are responsible for Lowell Bleachery getting its share of business.

The plant is a large finisher and fabricator of huck and terry toweling fabrics, which, along with diaper fabrics and flannelettes, are woven by the parent company, Dundee Mills.

In addition, the bleachery does considerable commission work in poplins, twills, drills, narrow sheetings, and ducks.

How the Bleachery Operates

Lowell uses two continuous ranges for bleaching its goods. One is an open-width type, the other handles goods in the rope. Both are three-stage setups with heating tubes ahead of the last two J-boxes.

In a typical routine, goods for the open-width range are singed, quenched, saturated with a weak solution of acid, and stored in a cold J-box for about 45 mins. to 1 hr. Lowell prefers acid-desizing to enzymes for this purpose. A thorough wash in cold water follows, and then the goods are saturated in a hot caustic solution and pulled through the heating tubes into the second-stage J-box.

After a 45-min. to 1-hr. layover, the fabric is again washed, this time in hot water, and is treated with peroxide and silicate to start the actual bleaching. The third-stage J-box receives and holds the goods for another 45 mins. to 1 hr.

The washing operations in all stages are made more efficient by means of elliptical rollers mounted near the bottom of the open-width wash boxes. The eccentric motion that is imparted to the cloth as it passes over these rollers is effective in driving the wash water through the fabric and gives a very thorough washing to the goods.

Toweling Handled in Rope

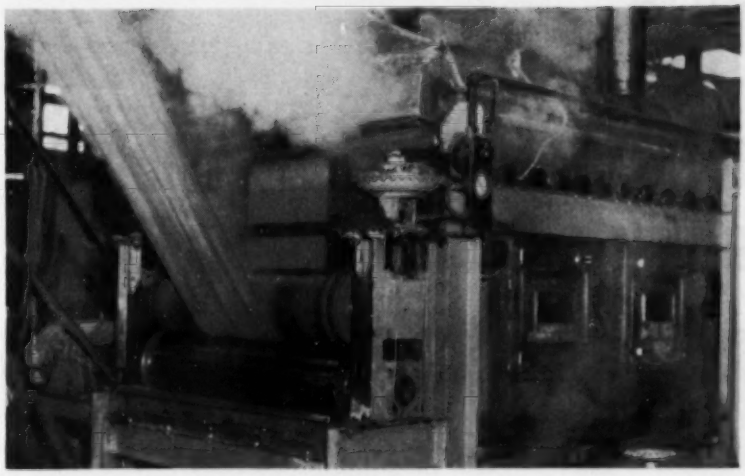
Lowell's crash, huck, and terry toweling is prepared and bleached in the rope on another bleaching range set up for this purpose. Here again an acid desize is given the goods; and if they are free of colored stripes, the same caustic-prepare and peroxide-bleaching steps are used as given on the open-width bleaching.

If the goods contain colored yarn, which is common in linen-service or institutional towelings, both stages are charged with peroxide. Caustic pretreatment would in most cases cause color bleeding of the dyed yarns. Narrow fabrics are run double strand in this bleaching range.

Washing on the rope range between stages is done on slack washers.

How Towelings Are Dyed

Terry toweling to be dyed into vat shades is dyed on a range that consists of a pigmenting pad, a chemical pad, a steamer, and a bicarbonate-of-soda



TERRY TOWELING is leaving the steamer after it has been vat dyed in the range reserved for this work. Neutralizing and air-oxidation, soaping, and washing follow.

saturator. These goods are not dried between pigmenting and reduction because the construction of terry cloth accentuates migration.

The final wash box of this range is charged with sodium bicarbonate to convert the caustic soda to soda ash. The goods are air oxidized, soaped, washed, and piled into bins to await drying.

The towel dryer is a festoon type that operates at 120 to 125° F. and holds 11 miles of towels. This temperature is considerably lower than is normally used for towel drying. Towels are tentered to width with steam after they are dried.

New Predryer Cuts Migration

One of the biggest problems in applying vat dyes to piece goods is that the dyes are prone to migrate, which causes a cloudy or mottled effect in the finished goods. Lowell Bleachery first tried an experimental infrared drying unit mounted between the pigmenting pad and the predryer. Results were so promising that a new range was equipped with a larger and more-modern infrared unit.

The appearance of the goods that are dyed on the new range is far superior to that run on a dye range that has a conventional predryer. The difference is most noticeable on heavyweight poplins that ordinarily have a tendency to dye unevenly. Infrared drying sets the pigment rapidly by removing approximately 35 to 40% of the moisture before the goods hit the drying cans. This immobilization of the pigment imparts a very clear and clean face to the goods.

Lowell is doing extensive experimental work with fiber-reactive dyes. These colors are applicable on continuous ranges and broaden the range of colors that can be offered. Brilliance and generally good fastness to light and washing are important factors possessed by these colors.

A good portion of the poplins, twills, and ducks that go into outerwear are finished with durable water repellents and preshrunk. Wash-and-wear finishes are also applied to some outerwear lines.

Towels Made in Modern Plant

An important adjunct to the bleaching, dyeing, and finishing operations is the towel plant. Here terry and huck towels are cut, hemmed, and packaged. All work flows from the sides of the room toward a central conveyor that moves the finished product toward the finished-goods warehouse.

The conveyor will carry towels two abreast through the cutting and hemming department and on into rack storage on five floors. The goods are diverted at a number of stations for proper storage until orders are assembled. They are then put back onto the conveyor and carried to the packing department.

OVER-ALL VIEW of the towel-fabricating plant shows conveyor that transports all finished units to packing or storage.

Better dyeing

by INTERNATIONAL SALT COMPANY, INC.

Brighter Shades, Better Color Yields with Extra-Pure Sterling TNA-5

That's the report from the Valdese Manufacturing Company, Valdese, North Carolina. Formed in 1913 as a small, 5,000-spindle mill, Valdese has grown into one of today's largest manufacturers and dyers of yarn. As one of many steps in a continuing modernization program, Valdese changed from ordinary salt to extra-pure Sterling TNA-5—in Naphthol, Sulphur, Direct, Developed and Vat dye baths.

Dyehouse technicians report that 99.98%-pure TNA-5 consistently helps them obtain better color fastness and a softer, smoother finish of the yarn. And TNA-5 gives a better color yield: savings on dyestuff alone more than pay for the extra cost of TNA-5 over ordinary salt!

To promote economy and convenience in dyeing still further, Valdese uses Sterling TNA-5 in brine form. The bulk TNA-5 is unloaded directly from railroad cars into a large dual-unit TNA-5 Dissolver. Here, TNA-5 is rapidly dissolved to make crystal-clear, fully saturated brine which is stored in the dissolver itself until needed. At the turn of a valve, brine is piped through flow meters which measure it into expansion tanks in back of the 24 dyeing kiers. This efficiency over the handling of dry TNA-5 permits substantial savings in time and labor.

Sterling TNA-5, used dry or in brine form, can help your plant get brighter color while you save on dyestuffs. If you prefer the extra economies of TNA-5 brine, an International Sales Engineer will gladly work with you in designing an efficient, economical TNA-5 Dissolver. Contact International Salt Company for any service of this kind . . . and for information on other Sterling products for textile processing.

3 meters measure TNA-5 brine to the 12 expansion tanks and 24 package dyeing kiers as shown here at Valdese Manufacturing Company's modern dyehouse. Note the stands of package yarn ready for the next loading of the kiers. Sterling TNA-5 is used in dyeing these famous Valdese quality yarns to customer specifications.

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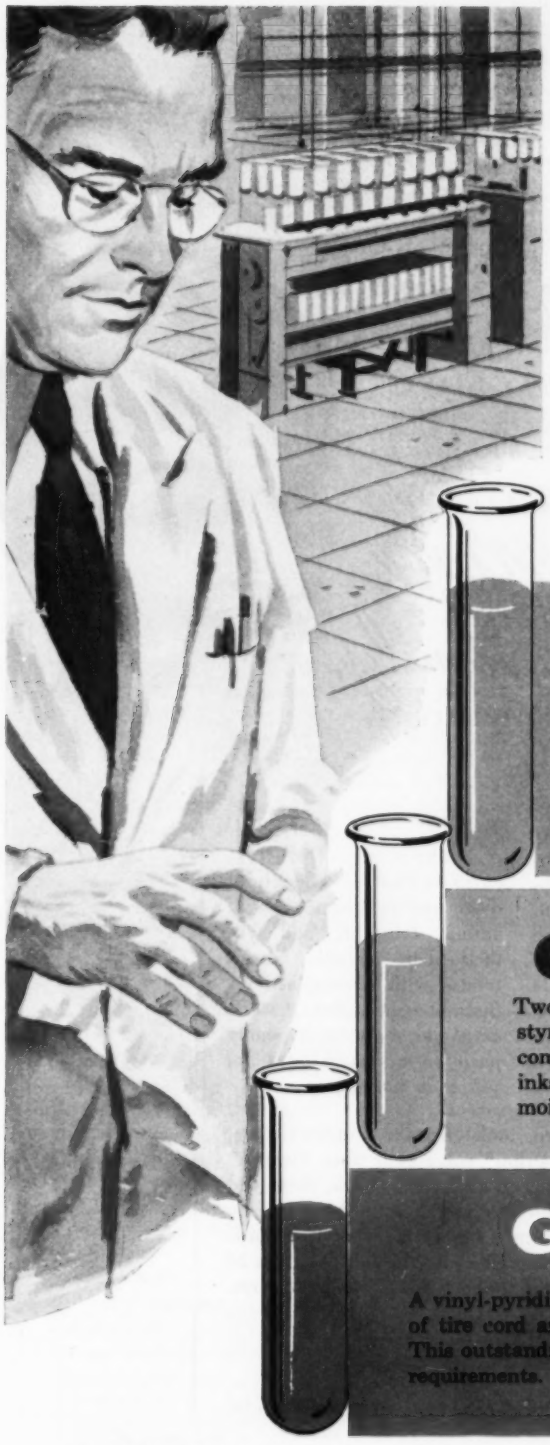

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A TEXTILE WORLD Refresher

Preparation and Bleaching—

2. How Fiber Structure Affects Cotton Processing

- Details of fiber structure
- Structure determines the ability of the fiber to respond to processing

BY PROF. KENNETH S. CAMPBELL, Dept. of Textile Chemistry
N. C. State College School of Textiles

FIBER STRUCTURE

THE REACTIONS OF THE COTTON FIBER to chemical treatment are in part determined by its physical characteristics. Cellulose is a macromolecule made up of anhydro-glucose units united by 1, 4 oxygen bridges. The anhydro-glucose units are linked together as in beta-cellobiose; so the anhydro-beta cellobiose is the repeating unit of the polymer chain. Chain length and the way the chains are arranged in respect to each other determine many important fiber properties.

Native cotton is made up of chains of molecules that consist of about 3,500 anhydro-glucose units. The molecular weight is approximately 570,000, figured on the number of units (3,500) times the molecular weight of each unit (162).

Cellulose is a strong fiber because its macromolecules are long, and there are therefore great possibilities of action between the many cohesive forces of neighboring chains. The principle force that binds the macromolecules together is the hydrogen bond, a form of secondary valence that exists between the hydroxyl groups of glucose molecules in adjacent chains.

The strong bonds produce a fiber that is highly insoluble in water and many other solvents.

	Length (A.)*	Width (A.)
Cotton fiber	44×10^{8}	2×10^{5} (20 microns)
Cotton-fiber lumen	4×10^{8}	1×10^{4} by 10×10^{4}
Cotton-fiber primary wall, including cuticle	4×10^{8}	1×10^{3}
Cotton-fiber secondary wall, including winding	4×10^{8}	5×10^{4}
Crystallites	150–1500	50
Cellulose chains	18,000	3x8
Unit cell of crystallite	10.3	7.9x8.35
Cellobiose unit	10.3	3x8
Glucose anhydride unit	5.15	3x8
Water molecule, by comparison	3	3.3

* A. = angstrom unit or 1×10^{-8} cm

1 micron = 0.001 cm. = 10,000 A. = 10^{4} A.

1 micron $\cong \frac{1}{25,000}$ in.

APPROXIMATE DIMENSIONS of the various components of the fiber are shown in this table.

How Fiber Damage Is Checked

The cotton fiber can be dissolved by immersion in cuprammonium hydroxide or cupri-ethylene diamine. These substances break the hydrogen bonds and introduce ionic groups that speed up solubilization.

The extent to which cotton may have been damaged by some form of chemical treatment can be determined by dissolving samples in either cuprammonium hydroxide or cupri-ethylene diamine.

Normal cotton dissolves in these solutions to produce a liquid of a certain viscosity. An equal weight of degraded cotton will produce a solution of lower viscosity because some of the hydrogen bonds were destroyed in processing. Analytical procedures based on this phenomena are very useful in determining the extent of degradation of the fiber at any stage of processing.

X-Rays Peg Fiber Structure

It was formerly believed that textile fibers were practically 100% amorphous. But if X-rays of a wave-length of 1.54 angstrom units are passed through cotton fibers, they will form diffraction patterns on a photographic plate that prove the presence of crystalline structures.

X-ray examination of this sort shows that cotton contains great numbers of submicroscopic crystals or crystallites laid out along the fiber axis. Furthermore, these crystallites lie in spiral paths about the fiber axis, and the spiral angle can be calculated from the diffraction pattern.

The pattern also tells something about the degree of crystallinity and the extent to which the crystallites are

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Trouble on the continuous dye range shows clearly in fluctuations on the electronically-traced Marhen graph. There could be two reasons—a need for LYKOPON concentrated sodium hydrosulfite or the service that goes with it.

For instance, you may actually be using too much hydrosulfite. Rohm & Haas service has uncovered cases where up to 25 percent more hydrosulfite than needed was being used.

But where testing uncovers a need for hydrosulfite, it's usually a clear case for LYKOPON. LYKOPON has uniform strength (94% minimum guaranteed, as shipped). This, and its unusual freedom from dusting, have made it the long-time favorite of textile finishers everywhere.

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arranged in parallel order. This information helps to predict the properties of a given fiber and helps to explain the effect of a given chemical treatment.

Crystallites Occur at Random

Crystallites are thin bundles of chain molecules also called micelles. They are not discrete areas in themselves. Individual chains may pass through crystallites and thereby connect them.

When the crystallite areas are in sufficiently perfect three-dimensional order, the total area is said to be in the crystalline state.

But crystallite areas are often interspersed with areas in which the chains are too far apart or not well enough oriented to form a crystal lattice. These are the amorphous regions that in a sense hold the crystallites together.

Crystallites do not appear with any degree of regularity and vary in size; but they have been determined to be from 150 to 1,500 A. (angstrom units) in length and 50 A. in width, as shown in the table on page 83.

Microscope Reveals Fibrils

The next building block in the cotton fiber is the fibril. Under an optical microscope, it appears to be a single fiber of about one micron in diameter. The electron microscope reveals that fibrils are composed of several dozen strands.

Fibrils are laid down in spiral fashion as the fiber grows at various angles. The smaller the angle is in respect to fiber axis, the stronger the fiber.

HOW STRUCTURE AFFECTS PROCESSING

The degree of crystallinity in the cotton fiber has considerable effect on how it will react to various reagents in processing. The crystalline areas are practically impenetrable to most reagents except those that will destroy cellulose.

The spaces between crystalline areas, which are hydrogen-bonded, are so close together that they will not even admit a water molecule of 3 A. diameter.

If the crystalline-amorphous area ratio is known, some insight is gained as to how the fiber will behave in processing.

Structure Varies Widely

Amorphous areas and the surfaces of the crystalline areas are considered to be accessible to reagents. The amorphous content of native cotton varies widely from 1 to 40%. The crystalline areas of untreated cotton are accepted as being from 80 to 90% of the total fiber. Mercerization reduces crystallinity to about 70%, but this reduction is not a result of destruction of the very durable crystallites. Actually, the crystalline areas persist as such even after the fiber has been reduced to a powder by treatment in hydrochloric acid.

Cellulose may crystallize in several forms. Natural cellulose is known as Cellulose I, while the type called Cellulose II is characteristic of mercerized cotton. The X-ray patterns formed by each are quite different and serve to distinguish one from the other.

The increased reactivity of mercerized cotton compared to unmercerized cotton is probably due to the wider interplanar spacings of the unit cell, which allow water molecules to enter more easily.

Orientation Versus Crystallinity

Although the molecules or portions of molecules within a crystal are ordered and aligned, or oriented, this alignment is not what is usually meant by orientation.

The crystallites themselves may be arranged within the fiber, either in an ordered or random fashion, parallel to the fiber axis. This situation is called crystallite orientation and is the most usual meaning of the term orientation.

If a fiber is stretched, the crystalline regions and neighboring amorphous areas are often more regularly aligned. There is no corrrelation between extent of orientation and degree of crystallinity. A very highly oriented fiber may have low crystallinity, and vice versa.

The amorphous regions of the cotton fiber are considered to be the only areas that can be penetrated by water or aqueous solutions. In an average cotton fiber, these open spaces occupy 30 to 40% of the total volume of fiber. The efficiency of any processing treatment of cotton is determined largely by the intermolecular, intermicellar, and interfibrillar spaces because the entry and diffusion of any liquid agent applied will be governed by their number and their arrangement.

Basic Rules Are Simple

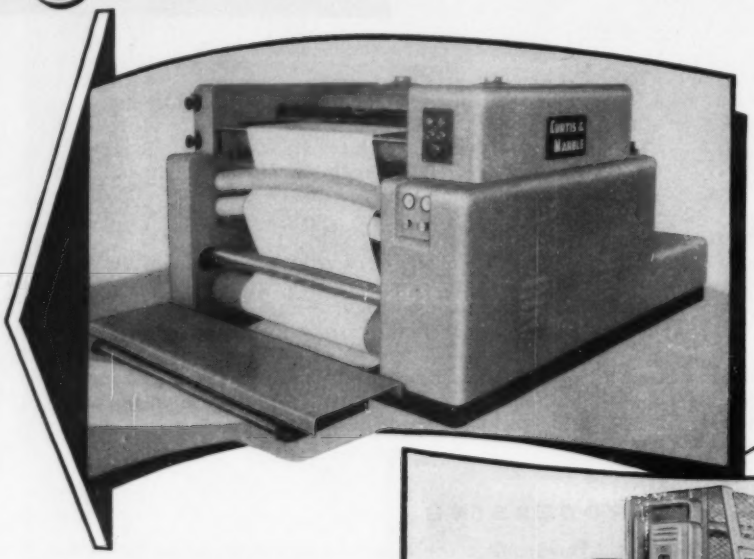
The two important limiting factors that apply to the everyday problems of the processor are the size of the molecule and the substance he wishes to apply and the size and distribution of the pores or open spaces in the fiber to be treated.

Water is the most frequently used solvent for fiber-processing chemicals; so the size of the water molecule usually determines the initial penetration of water-borne chemicals or dyes into any fiber.

It is generally agreed that water cannot penetrate the crystalline cellulose lattice; but it can enter the amorphous, or open, areas readily and break the relatively weak links between these less-ordered chain molecules. The water pushes these molecules and the crystallites farther apart, making it easier for larger molecules to penetrate the fiber. The water swells the fiber until the swelling force is balanced by the elastic forces set up by the deformation of the fiber.

Much work has been done by many investigators to develop this theory further and to find out the exact mechanisms involved when a fiber is treated with water or water solutions of dyes and chemicals. To date, in spite of these investigations, we know very little of the true nature of the pores in fibers. Their size, in cotton, varies widely; but some reports indicate that the average pore diameter is about 12 A. and that this diameter increases to about 50 A. when dry cotton is swollen by water. Pores of this size will accommodate the molecules of most dyes and chemicals.

One way - or the other...



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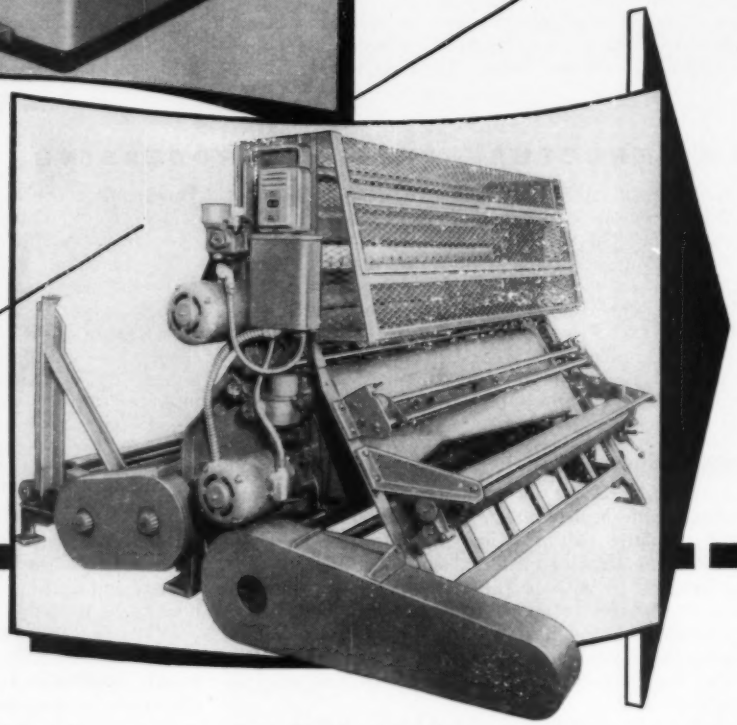

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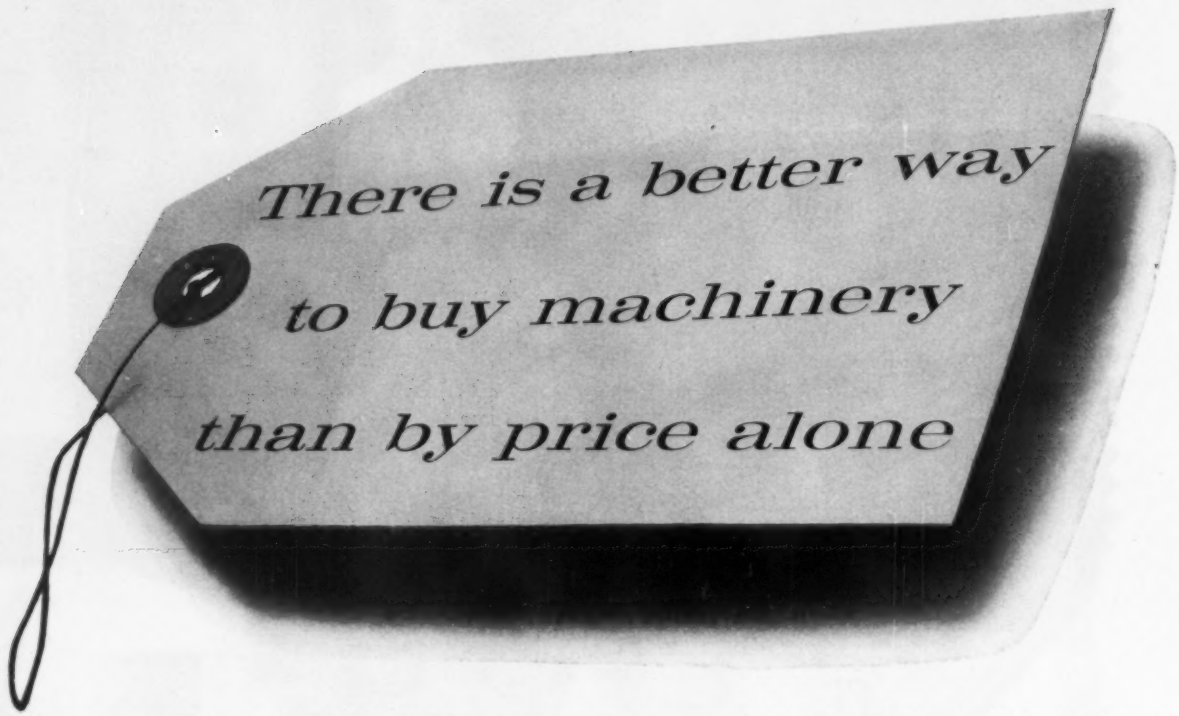

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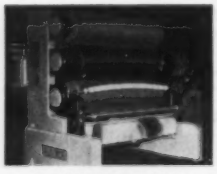

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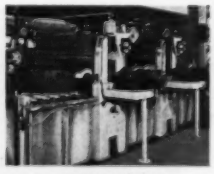
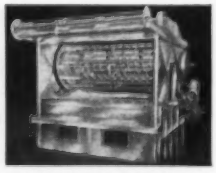


OPEN WIDTH COMPARTMENT WASHER



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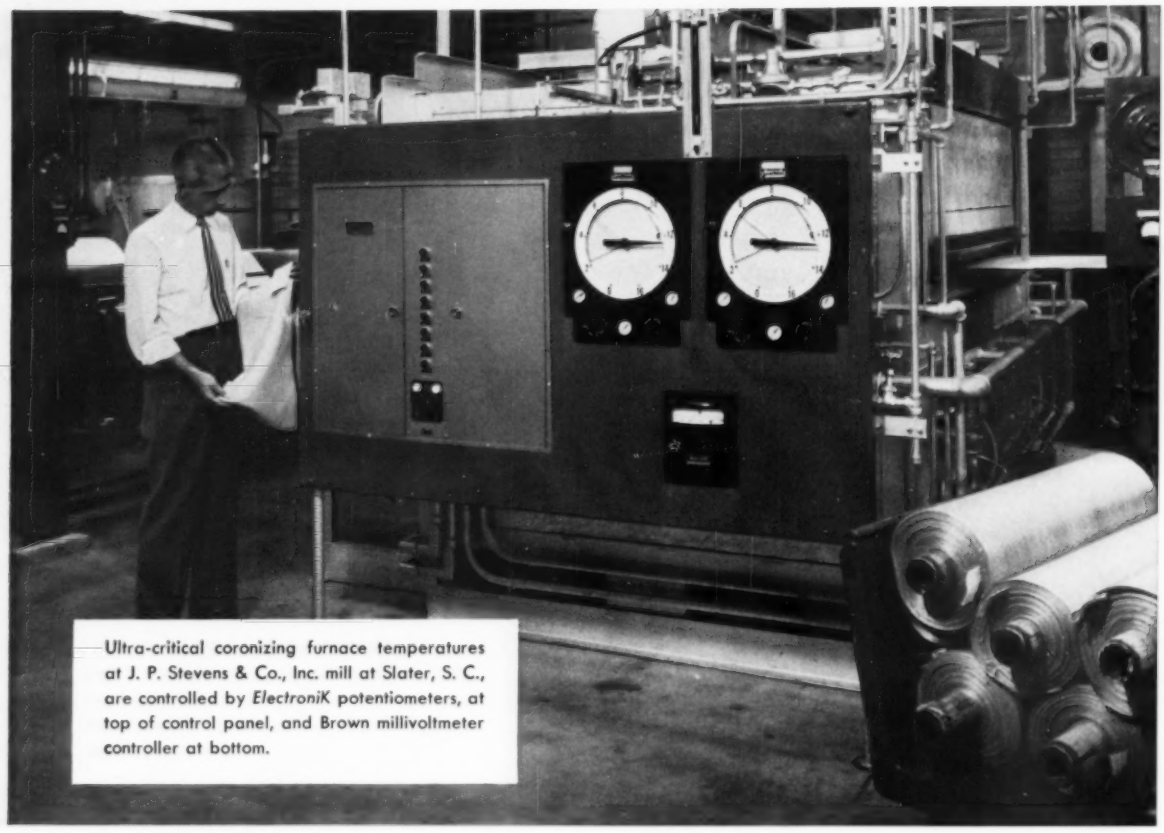

Ultra-critical coronizing furnace temperatures at J. P. Stevens & Co., Inc. mill at Slater, S. C., are controlled by *ElectroniK* potentiometers, at top of control panel, and Brown millivoltmeter controller at bottom.

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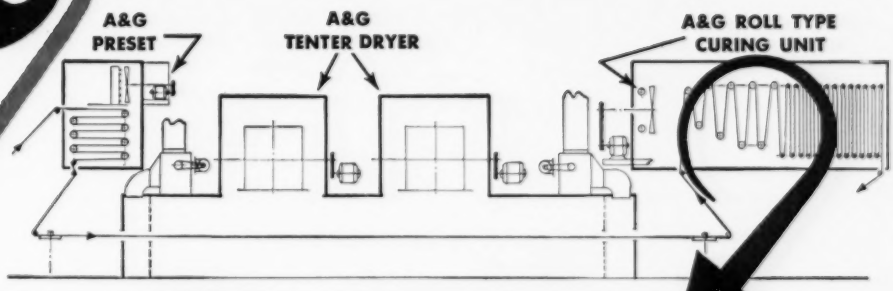
The A&G Resin Finishing Range



AN EVEN CURE

A SUPERIOR HAND

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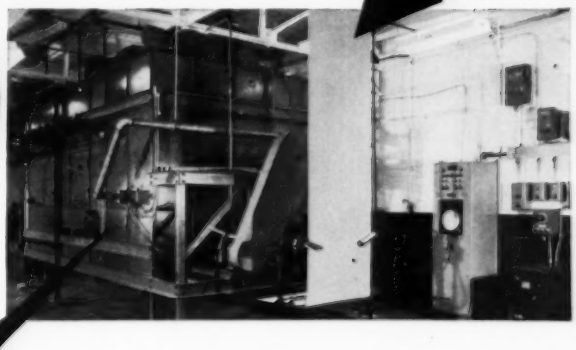

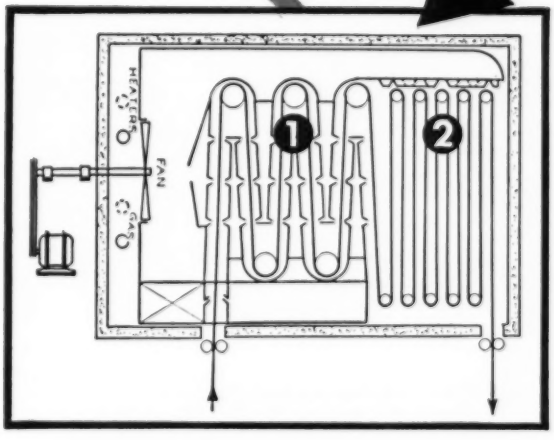

Study this A&G CURING UNIT. Note the dual zoning.

1. *Heat Up* Zone where the goods are brought up to the curing temperature quickly yet evenly. The resulting hand is superior. The cloth is in the A&G Curing Unit a shorter time, resulting in a superior hand and minimizing losses in tensile strength.

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The A&G Free-Wheeling Drive eliminates wrinkle problems and minimizes width loss with trouble-free pneumatic or mechanical clutches on all top rolls.

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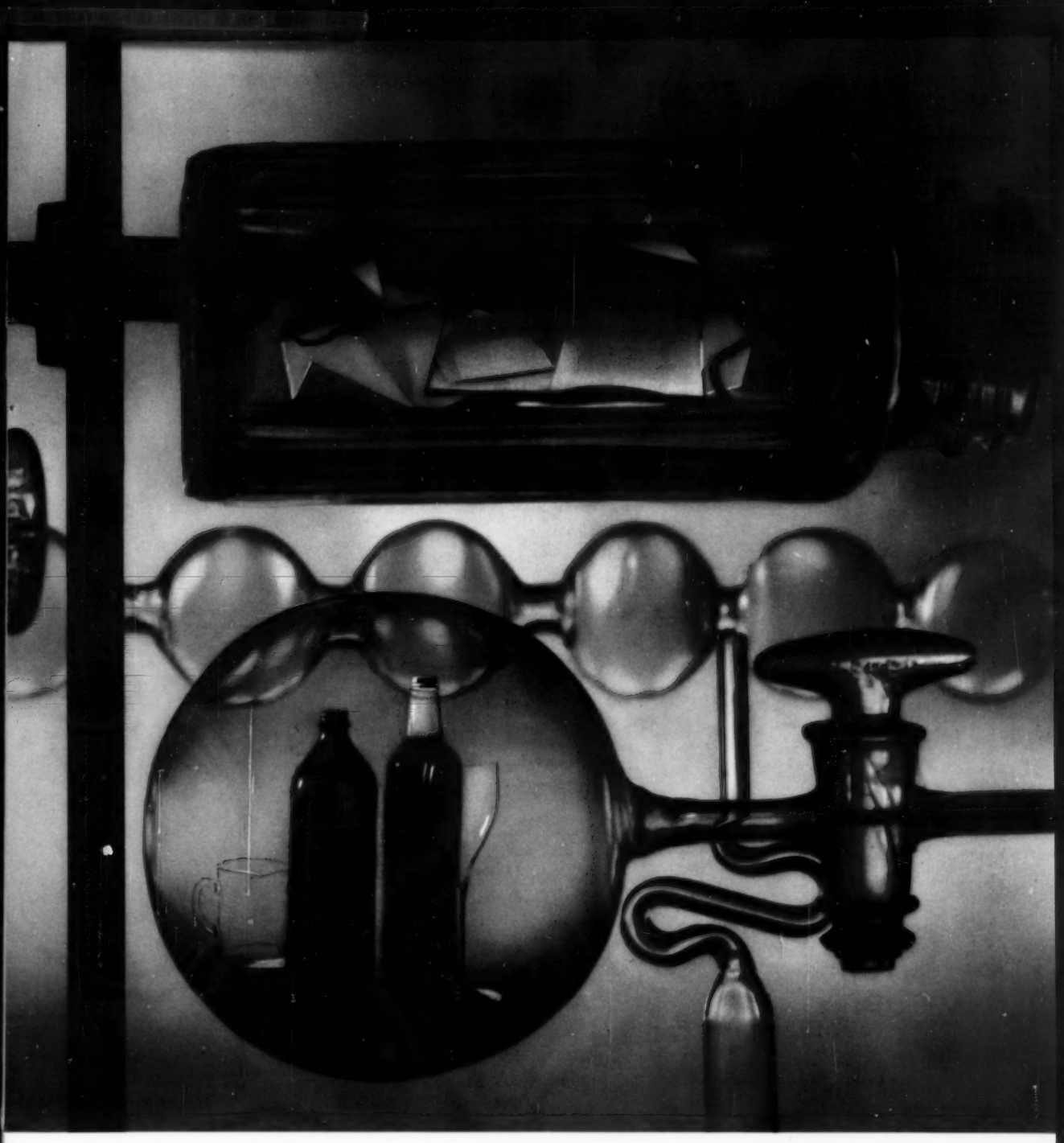

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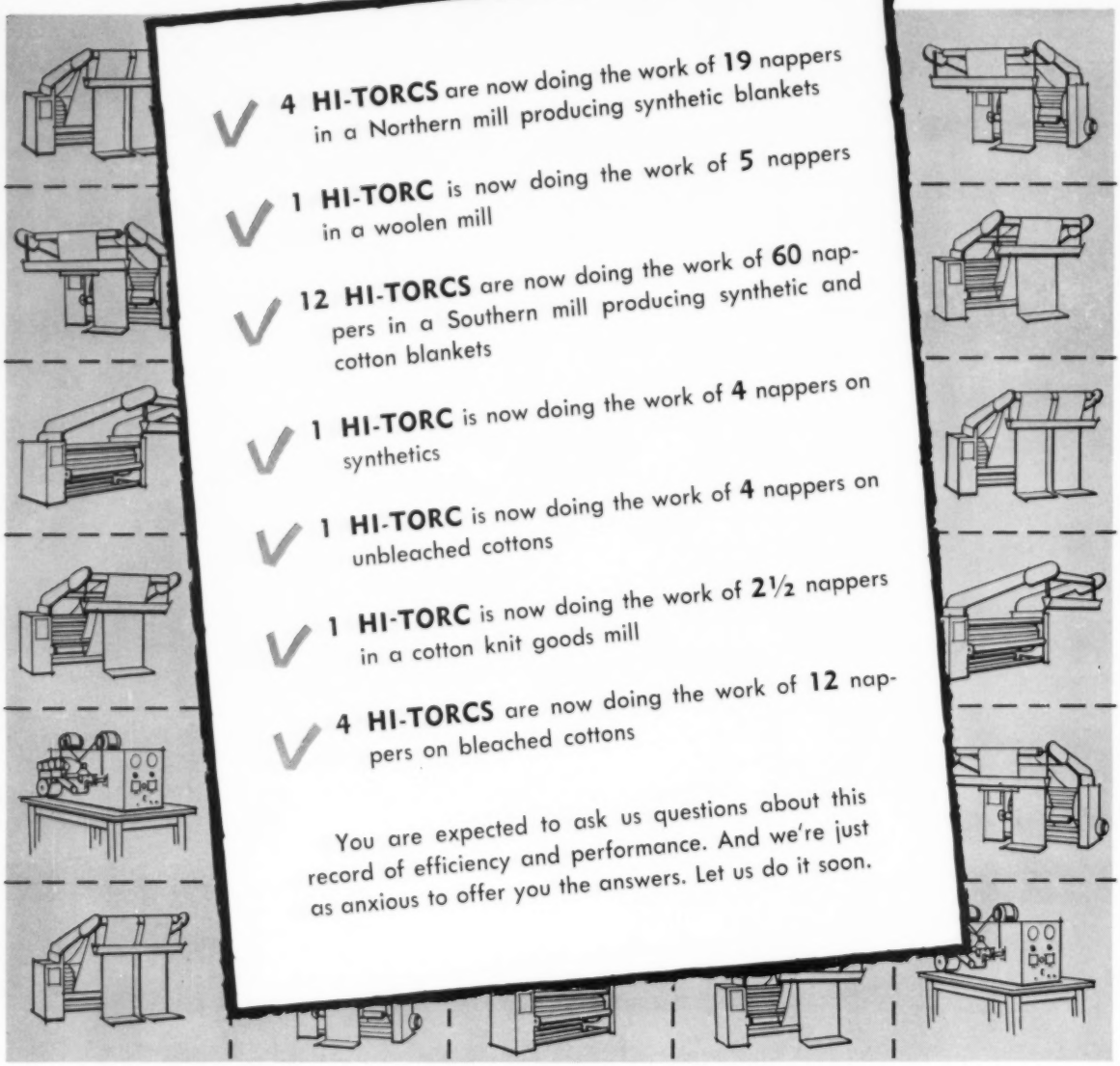

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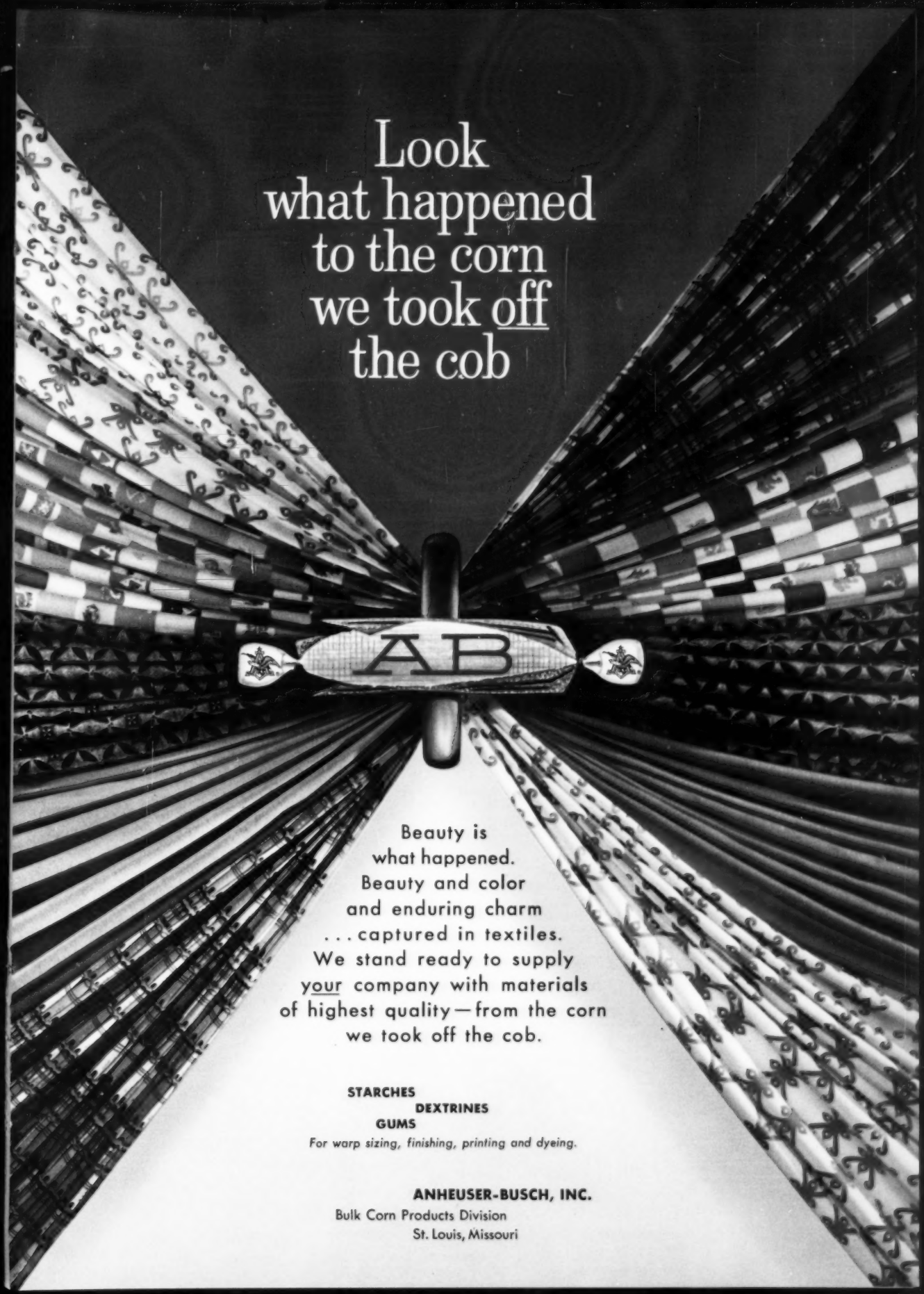
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A TEXTILE WORLD Refresher

The Basic Chemistry Of Dyes and Dyeing—III

Mordant dyes—

- How they are constructed
- How they are applied
- Which types produce the fastest shades

By **WILLIAM POSTMAN, Ph. D.,** Asst. Professor of Textile Chemistry and Dyeing
A. French Textile School, Georgia Institute of Technology

THE COLOUR INDEX lists under the heading of mordant dyes those dyestuffs that are applied mainly to wool and to which the dyer adds a metallic salt (a mordant) at some point during the dyeing operation. Some of the common names under which these dyestuffs are sold are chrome dyes, afterchrome dyes, metachrome dyes, etc. Many of the dyestuffs of this class are acid dyes, the fastness properties of which are materially improved by the addition of a mordant.

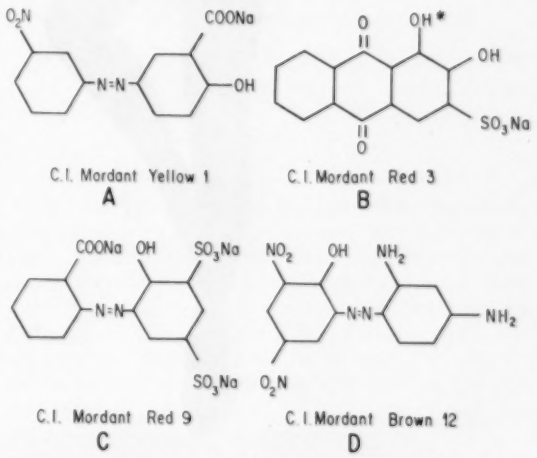
A mordant is a substance or combination of substances that enables a dye to become fixed to a fiber. The word mordant is derived from the Latin word mordere, which means "to bite." This term was adopted by early French dyers because they believed that the metallic salts and hydroxides used as mordants exerted a corrosive action on the fibers that made them rough and enabled the dyes to penetrate more readily.

Although chromium (as sodium bichromate) is the most widely used mordant, other metal salts such as aluminum sulfate, iron sulfate, and tin chloride are also used.

How Dyes Are Constructed

The mordant dyes, like the premetallized dyes, are all structurally constituted so that they can accept and hold a metal atom. For example, C. I. Mordant Yellow 1 (Fig. I, A) has a —COOH group and an —OH group on adjacent carbon atoms; C. I. Mordant Red 3 (Fig. I, B)

Fig. 1



THESE FORMULAS show typical configurations of four common mordant-dye structures.

	Chromophores		Auxochromes		Solubilizing Groups	
Dye	Structure	No. of each in molecule	Structure	No. of each in molecule	Structure	No. of each in molecule
A	—N=N—	1				
	—NO2	1	—OH	1	—COONa	1
B	—C=O	2	—OH	2	—SO3Na	1
C	—N=N—	1	—OH	1	—SO3Na	2
					—COONa	1
D	—N=N—	1	—OH	1	.....	...
	—NO2	2	—NH2	2		

THE FUNCTIONS of the various substituents shown in the formulas in Fig. I are shown in this table.

Geigy Dyestuffs Division of Geigy Chemical Corporation
Saw Mill River Road, Ardsley, New York

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has two —OH groups *ortho* (on adjacent carbon atoms in an aromatic ring) to each other, one of which is also *peri* to a —C=O group; C. I. Mordant Red 9 (Fig. I, C) has a COONa and an —OH group, both *ortho* to the azo (—N=N—) linkage; and C. I. Mordant Brown 12 (Fig. I, D) has an $-NH_2$ group and an —OH group both adjacent to the azo chromophore.

The accompanying table lists the chromophores, auxochromes, and solubilizing groups in each of the dyes in Fig. I.

Metal Added Three Ways

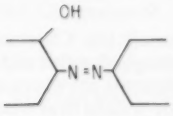
In dyeing with mordant dyes, the metal is added before dyeing, with the dyestuff, or after application of the dyestuff to the fiber. In the bottom-chrome method of dyeing, the wool is first treated at the boil in a solution of sodium bichromate. Then it is rinsed and dyed in a fresh acetic-acid bath containing the mordant dye. This method is probably the one least used today because the dyeings are not as fast as those obtained by other methods, and two separate baths are required.

Some mordant dyes are applicable by the metachrome or chromate process, a method that involves the simultaneous application of both dye and chromium. The single dyebath contains the dye, sodium chromate, and ammonium sulfate. Dyeing is effected at the boil in the pH range 5 to 7.

In the top, or afterchrome, method of dyeing, the dyestuff is applied first, from a bath containing acetic acid and glauber's salt. After the dye has been essentially completely taken up by the wool, sodium bichromate is added to the exhausted bath and dyeing is continued until chroming is complete.

C. I. Mordant Yellow 1, C. I. Mordant Red 9, and C. I. Mordant Brown 12 are suitable for application by any one of the three methods used for applying dyes of this type. C. I. Mordant Red 3 may be applied to wool that has been mordanted with salts of aluminum, chromium, or tin or may be treated after dyeing with an aluminum or chromium mordant. Application of this dye and a mordant simultaneously to wool is not recommended.

Dyestuffs that possess the structure

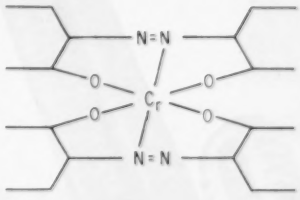


i.e., with only one —OH group *ortho* to the azo linkage, are incapable of forming a stable complex with chromium, although stable complexes with other metals such as copper are possible. The dyes that exhibit the greatest improvement in fastness properties when they are mordanted with chromium are those that possess two —OH groups or one —OH and one —COOH group, (as in C. I. Mordant Red 9), both *ortho* to the azo linkage.

When wool is mordanted with sodium or potassium bichromate in acid solution, the fiber absorbs chromic acid, which, at the elevated temperatures employed, is reduced by the sulfur in the wool to trivalent chromium. This reaction of sulfur atoms in the wool with the mordant no doubt causes some degradation of the fiber. When dyeing is complete, the dyed fiber contains chromium atoms linked with both dye and fiber molecules.

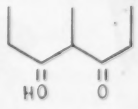
How Metal Is Combined

It has been established in some cases that in the dye-metal-fiber complex one atom of chromium is associated with two molecules of dye:



Note that the chromium is held by bonds to the oxygen atoms as well as to one of the nitrogen atoms in each of the azo (chromophoric) groups. This involvement of the chromophore may account for the marked change in shade that many of these dyes undergo when they are chromed.

Dyes such as C. I. Mordant Yellow 1 exhibit much less shade change when they are mordanted because the metal is held by the —OH and —COOH groups; the chromophore is not involved in the formation of the metal-dye complex, as shown in Fig. 2.

The structure  as in C. I. Mordant Red 3, may be responsible for the mordant-dyeing properties of dyestuffs of this type. However, the presence of two —OH groups in the molecule *ortho* to each other, greatly improves the stability of the final dyeing. Recent evidence indicates that with divalent ions (e.g. Cu^{++}) only the two hydroxyl groups are involved in the formation of the complex.

The increase in fastness properties (especially wetfastness) obtained when mordant dyes are metallized is attributable in part to their large size. The final dye-chromium complex formed within the fiber may be too large to escape through the intermolecular canals that were large enough to admit dye and metal as individual entities.

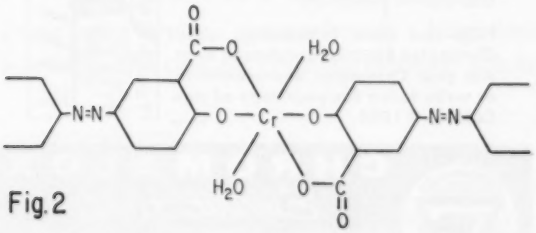


Fig. 2

LESS SHADE CHANGE occurs in dyes of this type where the Cr atom is not held by the chromophore.

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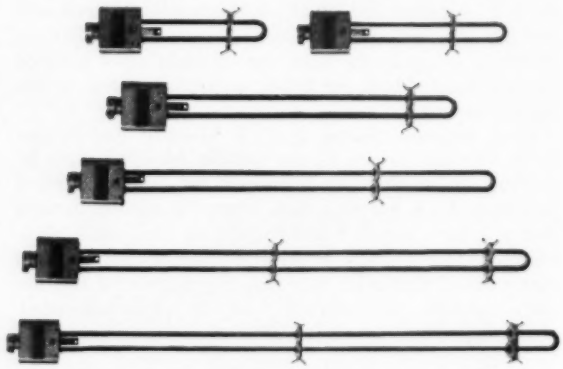

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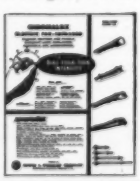

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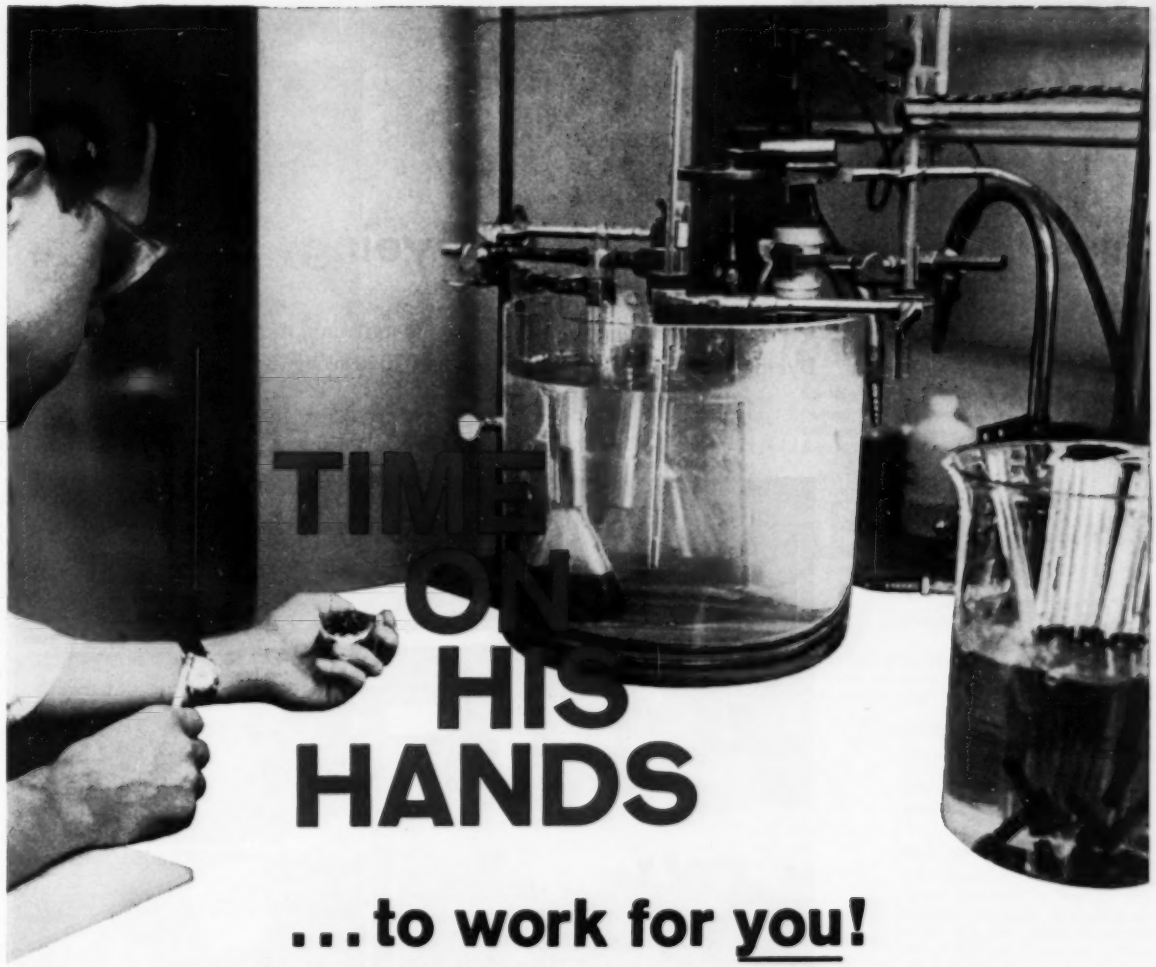

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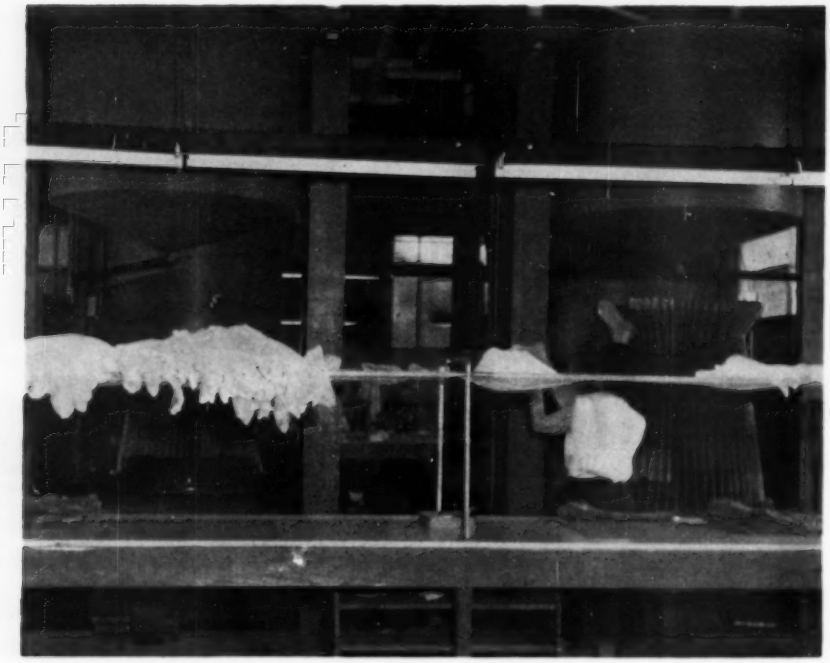

AUTOMATIC DYEING MACHINES have two 60-form dyeing units each. The machine at the left is about to start its dyeing cycle; the machine at the right is dyeing while the operator strips and reloads the dyeing unit that has just completed the cycle. Large tanks overhead hold dye liquor for a full 8-hr. shift of 45 cycles.

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An added advantage of the automatic dyeing system is that the whole operation can be done in a clean, dry area with a minimum of the muss that is usually associated with dyeing and finishing processes.

Picolet has two of the automatic machines in operation, but more will be needed to handle the total finishing job. At present, much of the mill's production is still dyed by conventional methods.

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The dyer first prepares a batch of dye liquor by dissolving scouring materials, dyes, sequestrants, a lubricant, and melamine resin in a pail. Ingredients are chosen to work well with

FORMS TILT OUT so that the operator can load on raw hose and strip off dyed hose easily. Great care is taken to place the hose accurately on the form.

each other at the operating temperature of 230 to 240° F. The dissolved liquor is then added to the circulating system of the dyeing machine and is pumped up to the 300-gal. tank. Water is metered in to make up the correct volume.

In the meantime the hosiery forms have been loaded by the operator, and the machine is ready to go. The automatic cycling is started, and one load of 60 hose moves into position under the dyeing chamber. Then 6½ gals. of the dye liquor is pumped into a receiver below the platform on which the hose are mounted.

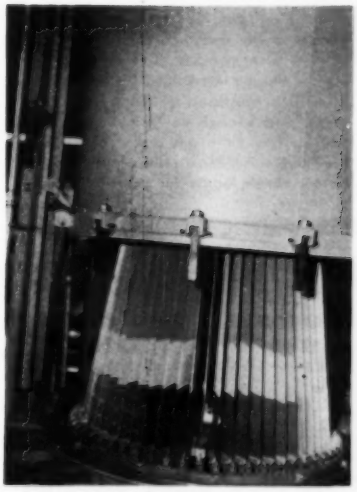
The dyeing chamber, which is similar to a bell jar, descends to the platform and is automatically locked in place to form a vapor-tight seal.

At this point, the dye liquor is pumped up into spray heads located above the hosiery; and steam is applied to raise the temperature in the dyeing chamber to 230° F.

Within four minutes the load of hosiery has been preboarded, scoured, dyed, finished, and dried.

About 1½ to 1¾ mins. are required to drain off the spent dye liquor, return the chamber to atmospheric pressure, and reposition it above the completed lot.

The finished batch then moves out to unloading position on a track, and a fresh rack of 60 raw hose moves simultaneously into position under the dyeing chamber.



BELL JAR is descending in this view to form the dyeing chamber. Fasteners hanging from lower rim will slip into matching slots in base and be locked in place.

Operator Paces Machine

At this time, the full cycle from loading through dyeing and stripping takes about 9 mins., primarily because even the best operator cannot do the manual work involved at a pace that will permit shortening the time of the machine-operating cycle.

Picolet's owner, William Koehlert, is well pleased with this addition to his production facilities. "We've cut down our seconds due to pulled threads very appreciably," he says, "principally because there is so much less handling. And shade duplication from batch to batch and lot to lot is excellent. Once the formula is established, we get the same shade every time."

Costs Cut Materially

An even more important consideration is the lowered production costs of the automatic dyeing method. The plant figures that hosiery can be dyed in the machine at 15 to 20¢ less per doz. pairs than by the next most economical method, which substitutes steaming for preboarding. Stack these figures alongside the 50 to 55¢ per doz. pairs that is about average dyer's charges for this class of work, and it is easy to see another advantage of the automatic dyeing system.

3 COST-CUTTING IDEAS for '59

Finding a way to increase production and reduce waste can often result in substantial savings. Take fabric guiders, for instance . . .

MECHO AIR GUIDERS

Here are three ideas that can pay off for you for years to come with these ingenious cost-cutters.

ELIMINATE FABRIC SPOILAGE
Mecho's gentle action and exclusive features eliminate double edges, spattering and other damage to fabric.

SPEED UP FABRIC PROCESSING
by adjusting Mecho's selvage finger tension to handle the lightest fabric or #8 duck at 1 to 400 ypm while in operation. It'll stay accurate within ⅛ inch.

REDUCE REPAIRS AND DOWN-TIME
with the simplicity of Mecho's precision design . . . no weights or linkages . . . nothing to get out of order.

If you aren't already enjoying these and other cost-cutting advantages of Mecho Air Guider, why not check up now?

Send today for your free copy of the Mecho Air Guider Catalog.

THE Guider SPECIALTY COMPANY

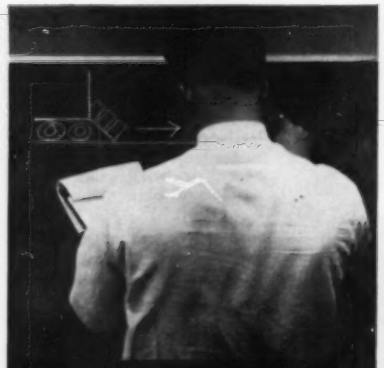
427 W. Rock Ave., New Haven, 15, Conn.

SOUTH'N REP.:
McSpadden and Scantland
P.O. Box 3635
Charlotte 3, N. C.

EXPORT & NEW ENG. REP.:
Standard Mill Supply Company
P.O. Box 1534
Providence 1, R. I.

Circle A-53 on Reader Service Card

HOW TO PLAN NEW STRATEGY



John B. makes $3-a-ton handling cost disappear. John's company has used solid caustic soda for years even through many increases in annual requirements. John sat down with his Hooker representative and doodled with some figures. He found that his company spends $4.00 on *in-plant* handling costs for every ton of caustic soda. The Hooker man showed John B. that he could cut this to $1.00 a ton by switching from solid to 50% liquid Hooker caustic.

Sam van R. finds a way to step ahead of competition. Sam's company repackages caustic soda for the specialty trade. Through the years it has specialized in regular flake. When Sam's Hooker man stopped in and discussed the fact that Hooker offers *four* flake sizes, Sam got an idea. He figures that if his company offers all four sizes to the market—a size that meets the *exact* needs of a particular job—it will get a big jump on competition.—How many sizes do you offer?

Fred P. makes a switch that saves him five figures. Fred's Hooker man pulled out a booklet and turned to a nomograph on page 13. Fred checked a few figures in his own books and drew a line on the nomograph. This simple procedure showed Fred that by switching from 50% caustic to Hooker's 73%, he would save enough on freight alone to pay for any extra equipment he might need and still show a solid black line on his company's ledger for years to come.

...with Hooker caustic soda for profit • Your Hooker man has a hatfull of ideas which you can use to amaze friends and influential people.

The only props you need are some Hooker caustic soda and your imagination. With them you can turn dollars into more dollars.

Did you know there are 12 ways to buy Hooker caustic soda? Liquid 50% • Rayon Grade Liquid 50% • Liquid 73% • Rayon Grade Liquid 73% • Solid • Regular flake • Crystal flake • Fine flake • Powdered • Phosphated • Low chloride • Special alkali.

HOOKER CHEMICAL CORPORATION
1705 Forty-Seventh Street, Niagara Falls, N. Y.

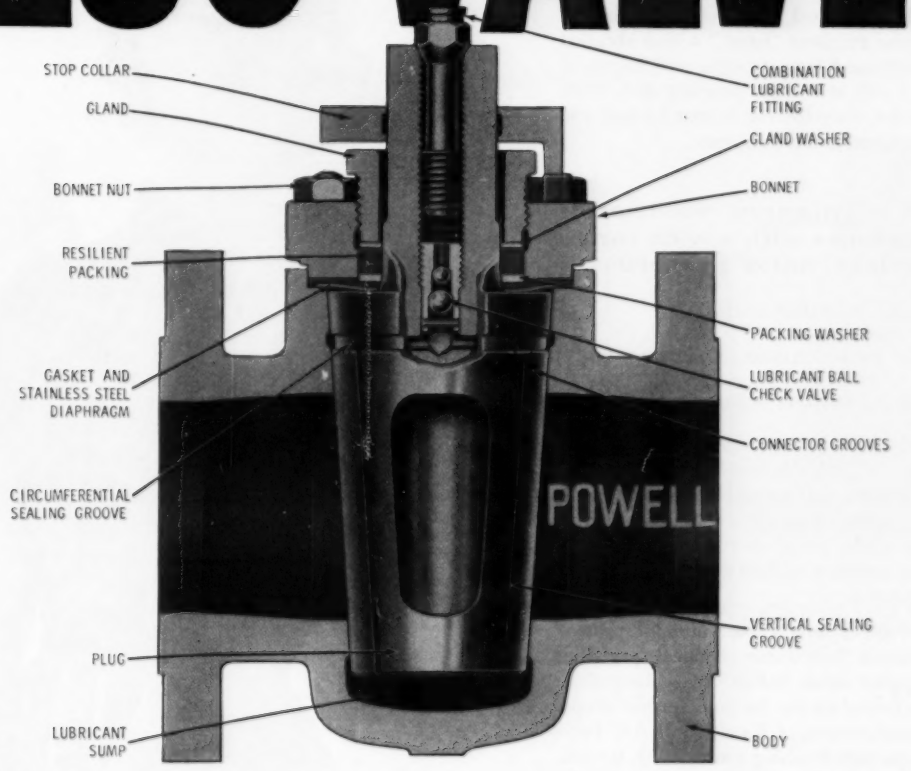
HOOKER CHEMICALS PLASTICS

Sales Offices: Chicago, Detroit, Los Angeles, New York, Niagara Falls, Philadelphia, Tacoma, Worcester, Mass.

In Canada: Hooker Chemicals Limited, North Vancouver, B. C.

POWELL

LUBRICATED PLUG VALVES



Sectional view Powell Screwed Gland Lubricated Plug Valve.

Like all Powell Valves, Powell Lubricated Plug Valves are superior in their field . . . and have many advantages over other conventional types of Valves.

- Simple design: only three basic parts—Body, Bonnet, Plug.
- Quick, complete shut-off—a quarter turn will close or open the valve.
- Tapered Plug assures positive seating.
- Machined surfaces of plug and body are not exposed in the open position. Any media adhering to the plug when in the closed position is removed when plug is rotated.
- Cavity-free straight passage assures streamlined flow in either direction. Scale and sediment cannot collect.

Powell Lubricated Plug Valves are available in sizes ½" through 16", depending on the type required—Semi-steel 175 and 200 pounds WOG;—Carbon Steel ASA 150 and 300 pounds.

Powell can also furnish Lubricated Plug Valves in other alloys on special order.

For all your valve needs, make it a policy to consult your local Powell Distributor—or write directly to us.

THE WM. POWELL COMPANY

Dependable Valves Since 1846 • Cincinnati 22, Ohio

For more data, circle A-55 on Reader Service Card

NOW! A better permanent finish for Wash-and-Wears with Emulsifiable A-C® Polyethylene

As your fresh new designs for wash-and-wears come to life, give them the superior finish and enhanced end-use performance they deserve—with Emulsifiable A-C Polyethylene!

Synthetic fibers finished with A-C Polyethylene emulsions show excellent "hand," added abrasion resistance, increased tear strength and improved sewability . . . all at a *lower finishing cost*. With Emulsifiable A-C Polyethylene in your finishes, you gain all these important advantages:

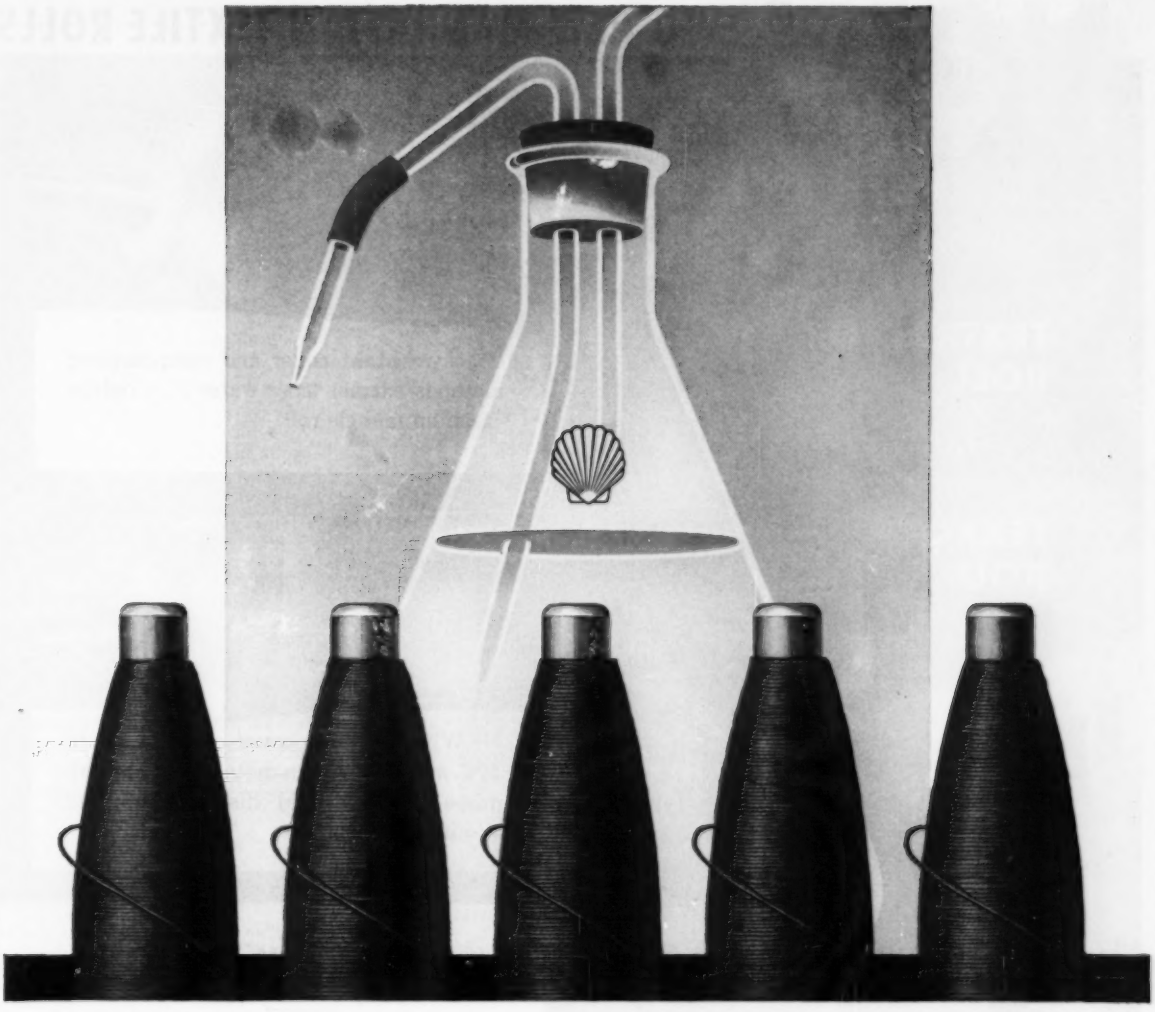
* **Better permanent wash-and-wear finishes with a wide range of excellent "hand" properties**
* **Reduced needle cutting**
* **Greater resistance to creasing**
* **Increased seam strength**

Emulsions of A-C Polyethylene are equally effective with synthetic and natural fibers, or blends. Properly formulated, they do not retain chlorine, keep whites *white*, resist scorching at elevated temperatures, and do not affect dye shades or light-fastness properties.

Make A-C Polyethylene a part of your present finishing practice! Your textile chemical specialties emulsion supplier either has an A-C Polyethylene finish or can formulate one for your specific needs. (We are manufacturers of Emulsifiable A-C Polyethylene resin, not finishing emulsions.) Investigate this superior finishing agent *now*—your fabrics deserve it! Just write or telephone today for complete information.

Allied Chemical

SEMET-SOLVAY PETROCHEMICAL DIVISION
Dept. 553-AH, 40 Rector Street
New York 6, N. Y.



How Shell Chemical serves the textile industry

Chemicals play a vital role in the textile industry. Having the right chemical for the job helps produce *better* fabrics. Shell Chemical is a convenient, dependable source for the chemicals listed at the right.

Hydrogen peroxide serves as a rapid, economical bleach and as an oxidizer for making vat colors brighter. Acetone is a spinning solvent for acetate rayon. Glycerine is a popular moistening agent for fibers and for textile printing compositions.

Eponite® 100 is a very effective, non-chlorine retentive resin for production of minimum-care fabrics. It imparts increased wrinkle resistance to cottons and rayons and reduces rayon shrinkage to a fraction of one per cent.

• • •

A Shell Chemical representative will be glad to discuss your specific needs. Write your nearest Shell Chemical district office for samples and technical literature.

Acetone
Eponite 100
Ethyl Alcohol
Glycerine
Hexylene Glycol
Hydrogen Peroxide
Isopropyl Alcohol
Methyl Ethyl Ketone
Methyl Isobutyl Ketone
Sodium Sulfonates

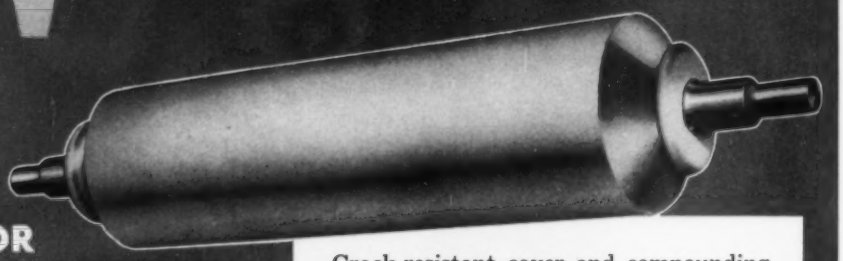
SHELL CHEMICAL CORPORATION
INDUSTRIAL CHEMICALS DIVISION

Atlanta • Chicago • Cleveland • Detroit • Houston • Los Angeles • Newark • New York • San Francisco
IN CANADA: Chemical Division, Shell Oil Company of Canada, Limited, Montreal • Toronto • Vancouver

SHELL

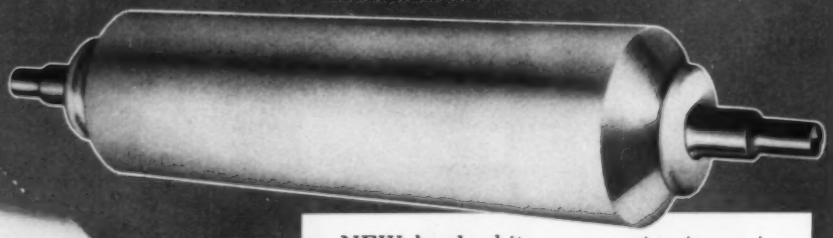
For more data, circle A-57 on Reader Service Card

NOW TWO NEW MANHATTAN TEXTILE ROLLS



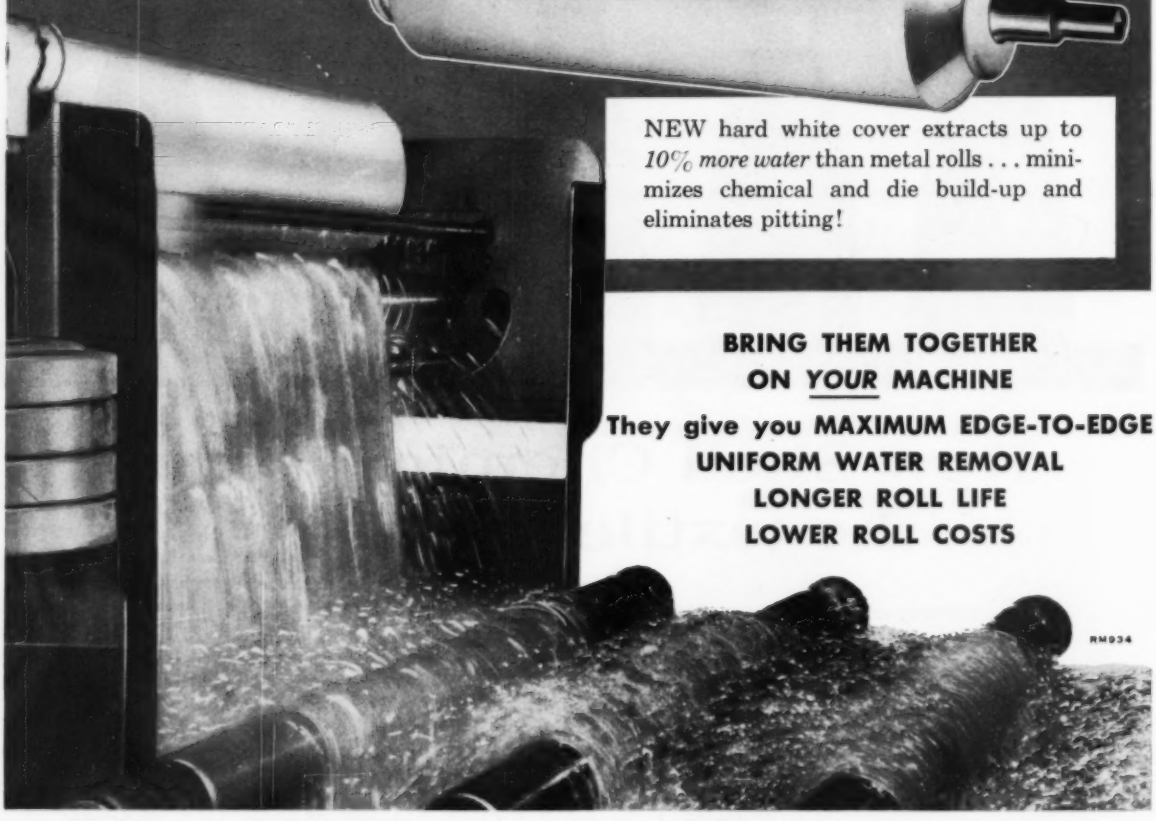
TEXTRACTOR ROLL

Crack-resistant cover and compounding methods extract *more* water . . . reduce crush on mangle roll!



TEXROC ROLL

NEW hard white cover extracts up to *10% more water* than metal rolls . . . minimizes chemical and die build-up and eliminates pitting!



BRING THEM TOGETHER ON *YOUR* MACHINE

They give you MAXIMUM EDGE-TO-EDGE UNIFORM WATER REMOVAL LONGER ROLL LIFE LOWER ROLL COSTS

ROLL COVERING PLANTS AT PASSAIC, N. J. • NEENAH, WIS. • N. CHARLESTON, S. C.

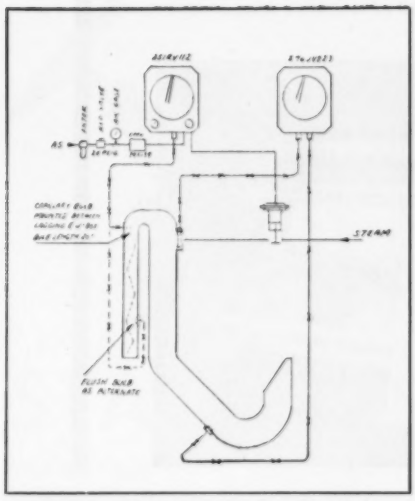
BELTS • HOSE • ROLL COVERINGS • TANK LININGS • INDUSTRIAL RUBBER SPECIALTIES

MANHATTAN RUBBER DIVISION — PASSAIC, NEW JERSEY

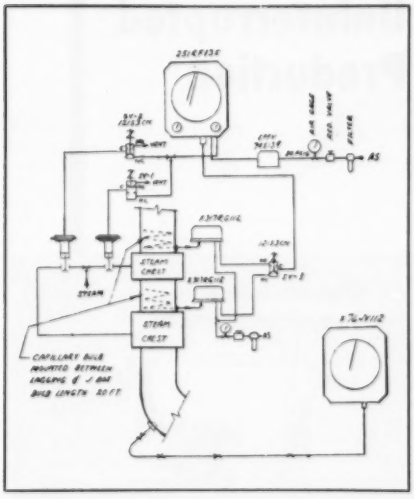
RAYBESTOS-MANHATTAN, INC.

Other R/M products: Abrasive and Diamond Wheels • Brake Blocks and Linings • Clutch Facings • Asbestos Textiles • Mechanical Packings • Engineered Plastics • Sintered Metal Products • Industrial Adhesives • Laundry Pads and Covers • Bowling Balls

For more data, circle A-58 on Reader Service Card

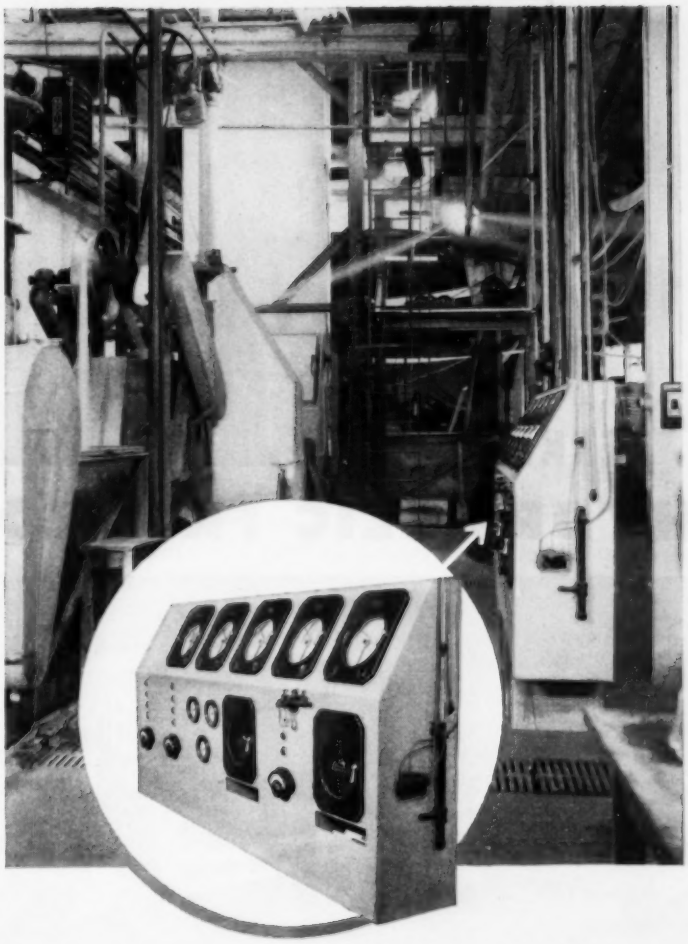


For DuPont J-Box. A vapor-actuated capillary bulb, mounted between the lagging and J-Box heater tube, senses hot spot temperature level of the steam and regulates the control valve accordingly. Setting of this control point maintains the proper amount of steam in both heater and J-Box. You minimize loss of steam. Temperature at the heel of the J-Box, and incoming steam temperature, are both recorded. An electro-pneumatic pilot valve shuts off air to the controller when range is stopped.



For Becco J-Box. Where steam is introduced through steam chests directly into the "J", Taylor TRANSAIRE* Transmitters, with SPEED-ACT*, are located above each chest. One or the other is used, based on cloth level in the "J". Switching is effected manually, by a two position switch which automatically admits steam to the correct chest. A recording controller regulates input steam, and the heel temperature is also recorded, using the flush bulb. The electro-pneumatic pilot valve shuts off controller air when range is stopped.

*Trade-Mark

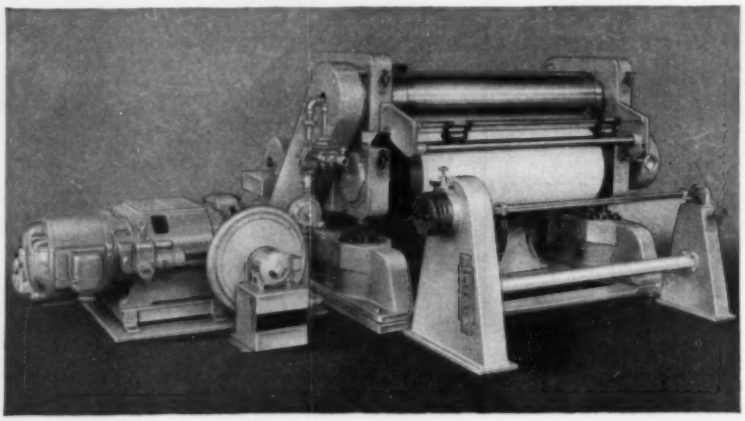


Whichever Bleach System you select...

Taylor-made Control Systems give maximum efficiency

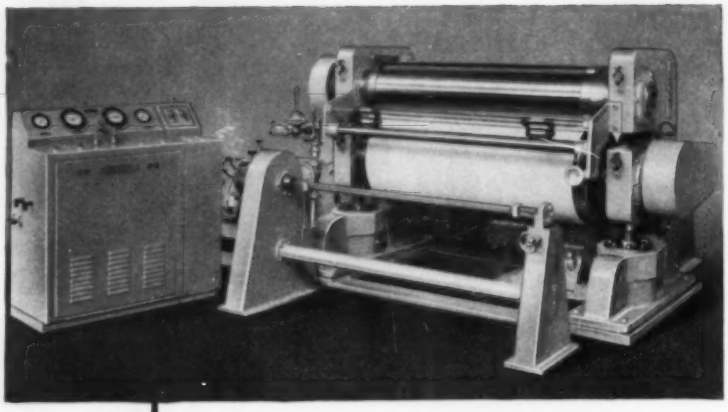
Drawings at left show the control systems we've designed for both the DuPont and Becco Bleach Ranges. Pictured above is a typical Taylor central control panel for the continuous bleaching process. Automatic control of continuous bleach J-Boxes gives you definite savings in chemicals and steam, plus more uniform bleaching. The Taylor control systems shown here are simple to operate and maintain and give maximum control efficiency at low cost. For complete details, see your Taylor Field Engineer, or write Taylor Instrument Companies, Rochester, N. Y., or Toronto, Ontario.

Taylor Instruments MEAN ACCURACY FIRST



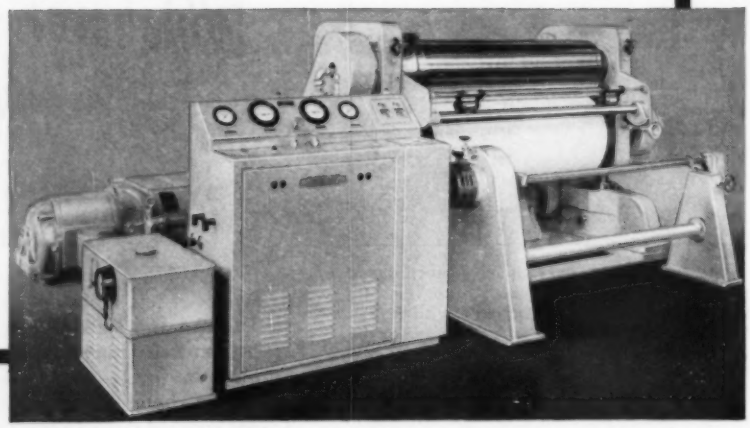
New PERKINS

HYDRAULIC FRICTION CALENDER



Built for High Uninterrupted Production

New pressure system, automatic temperature control, oil circulating system and seam detector.



B. F. PERKINS & SON, INC.

HOLYOKE, MASSACHUSETTS

A Y **Globe** that challenges comparison shows it pays to

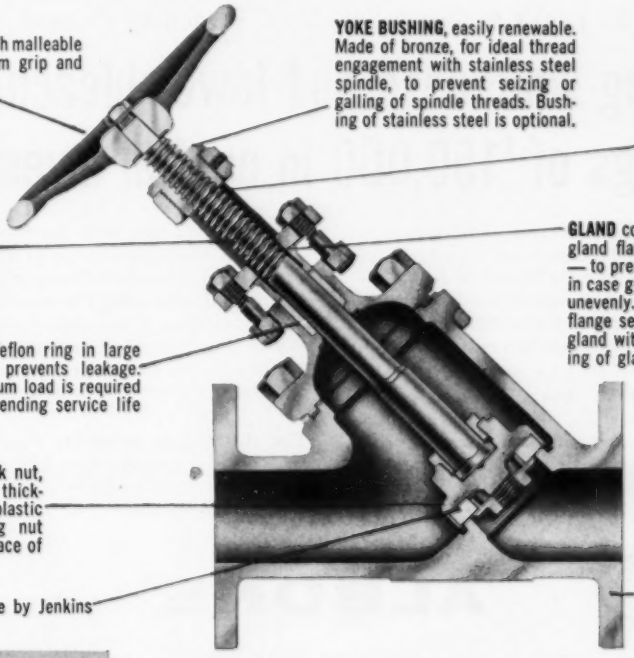
Specify JENKINS for STAINLESS STEEL Valves, too

Want the "best buy" in Stainless Steel Y Globe Valves? Compare this Jenkins Fig. 1335 with any on the market. You'll conclude that it's hard to beat Jenkins at making valves, no matter what the material.

You'll find genuine superiority of design and construction in the features shown here. But no picture can show the quality of the castings . . . the precision machining . . . the rigid inspection and testing that have gone into this valve. All of these are as important as design and metal alloys in assuring long, dependable, economical valve service. And, all of them are up to the peak standards for which Jenkins has been known for almost a century.

SEND FOR NEW CATALOG of Jenkins Stainless Steel Valves, in patterns and alloys that satisfy the requirements of practically all corrosive services.

These Jenkins Valves meet valve industry specifications and the high standards established by leading users of stainless steel valves.



WHEEL of high strength malleable iron designed for firm grip and easy operation.

SPINDLE of large diameter and dense structure has high resistance to wear and torsion strains. Easy, tight closing is assured by long, precision machined thread bearing surfaces. A beveled shoulder provides backseating against inside of bonnet, permitting repacking under pressure.

PACKING A Teflon ring in large packing box prevents leakage. Only a minimum load is required on gland, extending service life of packing.

DISC HOLDER, held by lock nut, has depth equal to disc thickness, preventing flow of plastic disc. Wide disc retaining nut covers all but seating surface of Teflon disc.

DISC is Teflon made by Jenkins

YOKE BUSHING, easily renewable. Made of bronze, for ideal thread engagement with stainless steel spindle, to prevent seizing or galling of spindle threads. Bushing of stainless steel is optional.

YOKE BONNET, a single unit, has liberal space between yoke arms for easy access to packing box. Tongue and groove joint with body makes a pressure-tight seal with less tightening on the bolts, and eliminates possibility of blowing out the Teflon gasket.

GLAND consists of two pieces — gland flange and gland follower — to prevent binding of follower in case gland bolts are tightened unevenly. Crowned surface of flange secures tightness against gland without excessive tightening of gland nuts.

BODY Through-port design for full, free flow. Liberal seat height permits repeated refacing. Cast on body are directional arrow and bosses for drain connections. End flanges conform to M.S.S. specifications.

JENKINS VALVES

LOOK FOR THE JENKINS DIAMOND

Sold Through Leading Distributors Everywhere

JENKINS BROS., 100 Park Avenue, New York 17, N. Y.

☐ Send the new stainless steel valve catalog

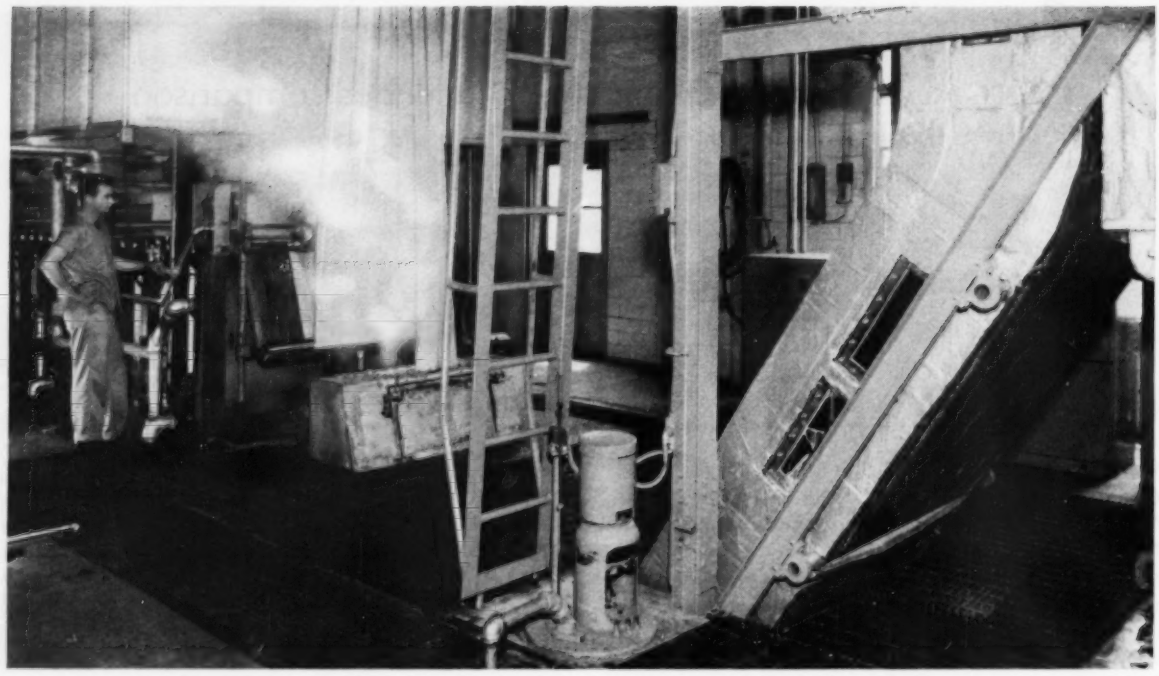
☐ Have a representative call on me

NAME & TITLE.....

COMPANY.....

ADDRESS.....

For more data, circle A-61 on Reader Service Card



While others are now in operation, this installation was the first open-width Solo-Matic system. It uses the new, patented Du Pont-type J-Box* (shown above) optional with the Solo-Matic—for highest-quality bleaching.

Another mill installs Du Pont's exclusive Solo-Matic Bleaching Process . . . reports:

Outstanding whiteness and lower bleaching costs ...with savings of $150,000 in capital investment alone

A well-known midwestern mill is using Du Pont's exclusive Solo-Matic Bleaching Process in an open-width continuous peroxide system with a Du Pont-type J-Box*. It's one of the most modern and efficient bleaching systems in operation—and the mill reports outstanding whiteness at substantially reduced labor and utilities costs.

This mill was originally planning to construct a new 2-stage bleaching installation. Then a Du Pont Technical Representative showed how the single-stage Solo-Matic Process could do the job and with *lower bleaching costs*. Not only was this accomplished, but the mill estimates their Solo-Matic installation saved them over $150,000 in capital investment alone!

You, too, can save with Du Pont's Solo-Matic Process . . . Du Pont can help you cut production and utilities costs as it has for more than 25 cotton mills who have switched to this modern process. The versatile Solo-Matic can *double* your production in the same floor space, or maintain the same production in *half* the space—with either new or existing equipment. In any case you can count on improved brightness, fullness and uniformity in your product.

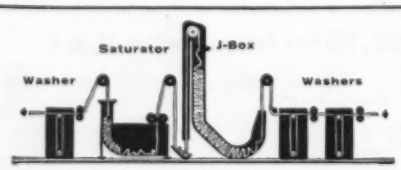
* * *

Get all the facts about Du Pont's exclusive single-stage process from your Du Pont Representative, or write: E. I. du Pont de Nemours & Co. (Inc.), Electrochemicals Dept., Wilmington 98, Delaware. *U.S. Patent 2858184

DU PONT
REG. U.S. PAT. OFF.

ALBONE® hydrogen peroxide

BETTER THINGS FOR BETTER LIVING...*THROUGH CHEMISTRY*



Du Pont's Solo-Matic Process—the most advanced single-stage hydrogen peroxide bleaching process available.

DON'T CONFUSE THE SOLO-MATIC WITH ANY OTHER PROCESS!

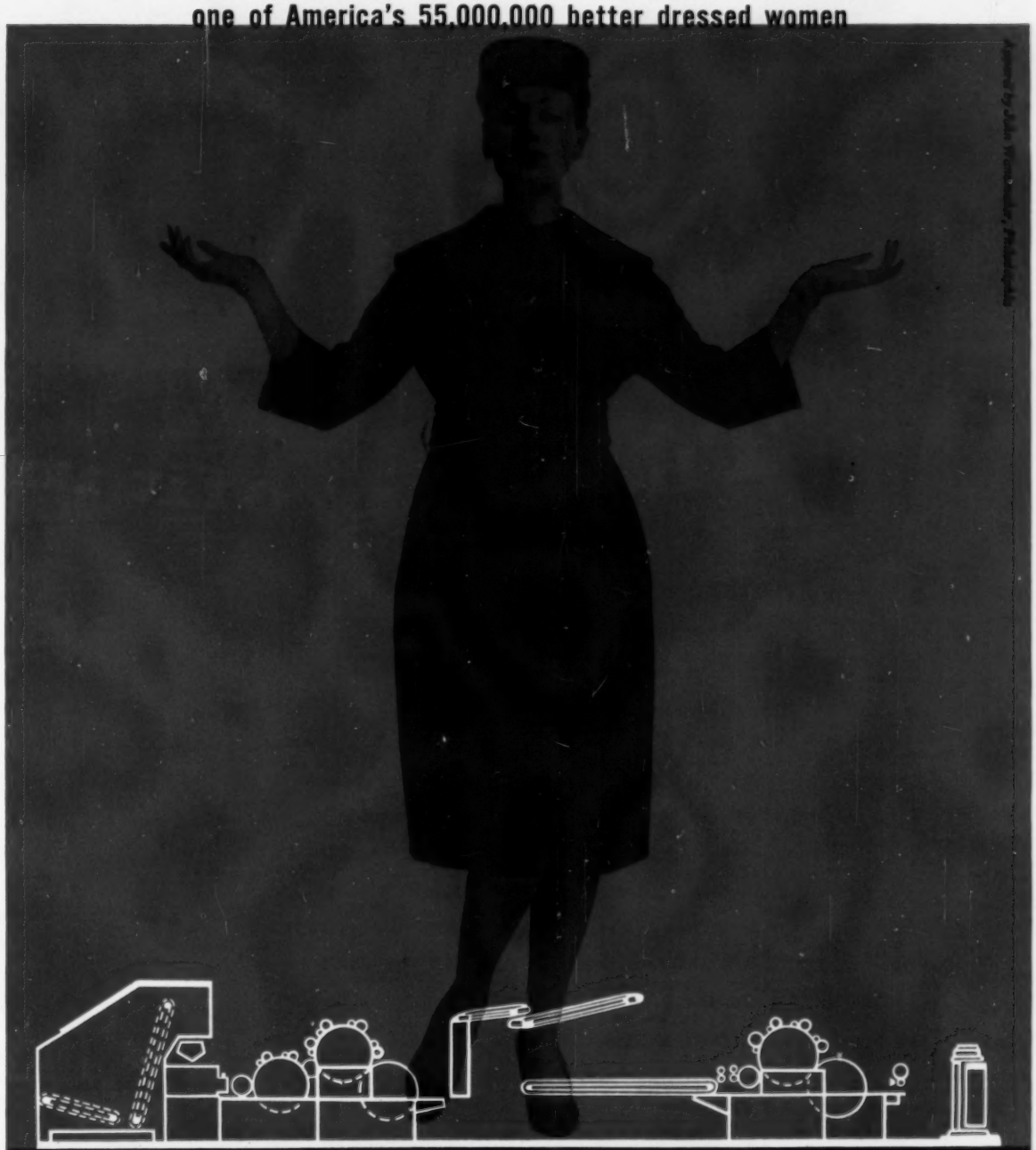
Other processes may *sound* similar, but there is *only one* Solo-Matic Bleaching Process and it was developed by Du Pont. It is essentially a chemical technique that can easily be adapted to any existing or new continuous peroxide bleaching installation. The Du Pont Solo-Matic Process is helping more than twenty-five well-known mills improve bleaching quality, cut costs.

Milady won't recognize the name PROCTOR, yet she loves that extra, long-lasting beauty and quality which is so distinctive of fabrics processed with PROCTOR Textile Machinery.

Our males too appreciate the superior qualities of PROCTOR-processed textiles, whether for their own personal attire, or for the many knit, woven, tufted and non-woven industrially applied products.

PROCTOR Textile Machinery adds quality and saleability. America is truly better dressed—and better served—because of PROCTOR.

one of America's 55,000,000 better dressed women



PROCTOR & SCHWARTZ INC., PHILADELPHIA 20, PA. Proctor

Preparatory equipment—cards—garnetts—bleach ranges—hop agers—beg dyeing—tenter housings—stock dryers—carpet dryers—non-woven fabric equipment—equipment for producing Redmanized ® sheets in M fabrics.

For more data, circle A-63 on Reader Service Card

Any dyer, purchasing agent, chemist or mill official knows the value of purity — in both the purchasing of raw materials and the processing of the finished product.

Take salt, for example. About one-half its cost is freight! So, they say: "Why pay for shipping unwanted impurities?" And the fact is — you can't buy a purer rock salt than Jefferson Island.

For all salt needs — rock or CMF (Calcium Magnesium Free) — most companies call The Man from Diamond Crystal. Why don't you? He has the facts, the proof, the service.

Diamond Crystal Salt Co., St. Clair, Michigan

Plants located at Akron, Ohio;
Jefferson Island, Louisiana; St. Clair, Michigan.

Jefferson Island DIV.

DIAMOND CRYSTAL SALT CO.

NEW *never before available*

SUMSTAR™

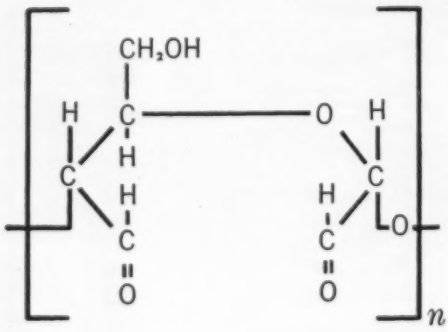
a polymeric dialdehyde

For the first time, a new polymeric dialdehyde, Dialdehyde Starch, is offered under the name SUMSTAR™ by Sumner Chemical Company.

Originally developed by the United States Department of Agriculture's Northern Utilization Research & Development Division, the process has been adapted for manufacture by Sumner.

Dialdehyde Starch is described as "cornstarch oxidized by periodate ion. Oxidation breaks the carbon-to-carbon bond between C_2 and C_3 of the starch molecule's glucose units, forming a dialdehyde unit. Any number of glucose units can be oxidized, depending on the properties wanted at the time." (Chem. & Eng. News, Dec. 9, 1957)

Following is the structural formula and the list of tentative specifications for SUMSTAR now being made in limited quantities. (The specifications will vary, of course, for specific grades and types of SUMSTAR.)



description: Free-flowing white to pale yellow powder

percent aldehyde content: As required (corrected for water)

currently available: 1. Over 90%
2. 75%-80%
3. 50%

water: Less than 10%

heavy metals: 20 ppm. maximum

sulfated ash: 1% maximum

The applications of this polymeric dialdehyde for industry appear to be almost unlimited. Many uses have already been evaluated and many others are in the process of evaluation. Here are some of the principal industrial applications which are being evaluated:

leather—tanning
textiles—crease resistance and waterproofing
plastics—new polymers
paper—increase in wet strength

The many areas in which applications research on SUMSTAR is under way cover as broad a range as the chemical industry itself. Here is, for example, a polymer with the functional groups of glyoxal. Evaluation of SUMSTAR as a photographic hardener, bacterial inhibitor in cutting oils, vulcanization retardant, coating for printing plates, etc., are a few suggested areas for product development and process modification with SUMSTAR.

SUMSTAR™ is now available in limited quantities. Samples are available upon request.

SUMNER CHEMICAL COMPANY

Division of Miles Laboratories, Inc.

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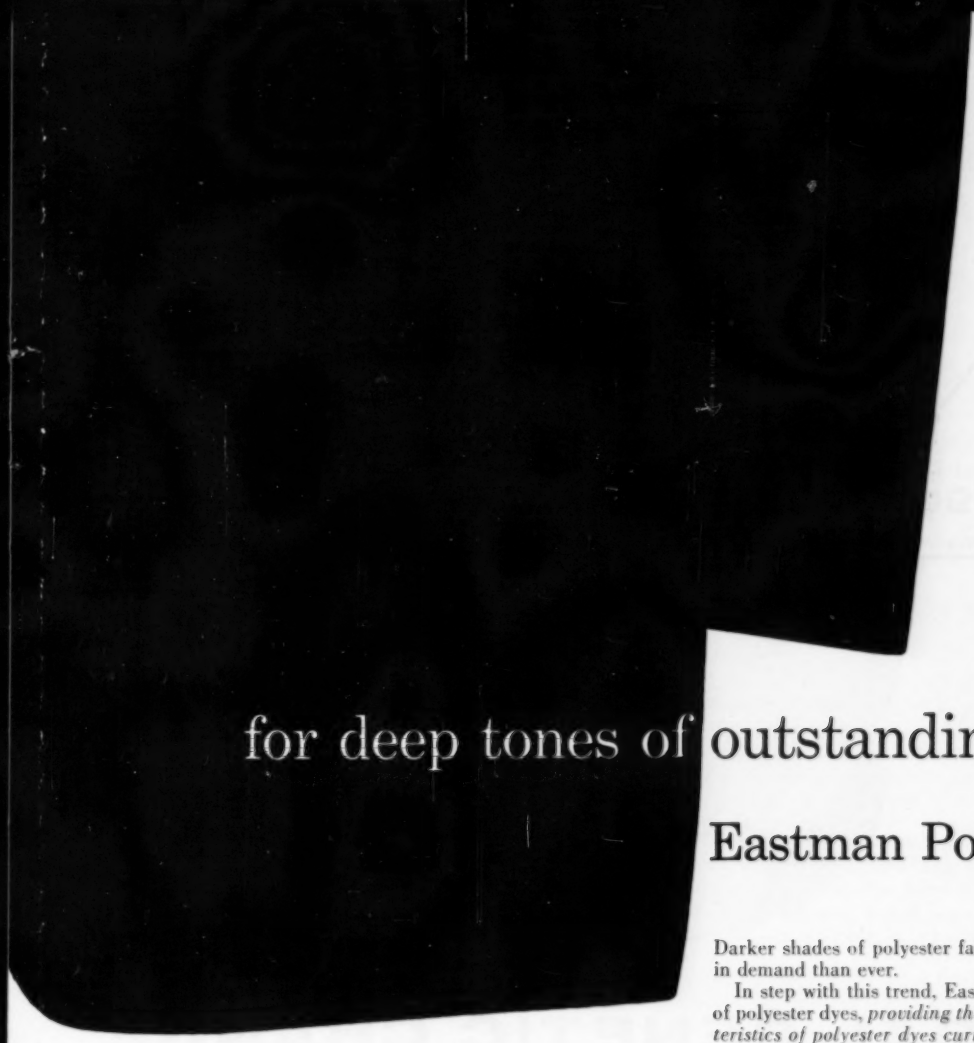
For more data, circle A-65 on Reader Service Card



*Dark Navy**

for deep tones of outstanding fastness

Eastman Polyester Dyes

Darker shades of polyester fabrics and their blends are more in demand than ever.

In step with this trend, Eastman offers an expanding series of polyester dyes, *providing the best all 'round fastness characteristics of polyester dyes currently available.*

Specifically developed for use with polyester fibers, Eastman Polyester Dyes exhibit outstanding fastness to washing, light, sublimation, crocking, perspiration, dry cleaning and wet pressing.

Equally important are their excellent processing characteristics... good build-up, good exhaustion and outstanding leveling properties. Thus, darker shades of navy, brown and grey are economically obtained.

Dyeing with Eastman Polyester Dyes is easily accomplished with carriers or under pressure at elevated temperatures. Fibers can be readily dyed in tow, tops, stock, or fabric forms. Fabrics of polyester filament can be conveniently dyed in jigs. Fabrics woven of spun polyester yarns alone or blended with cotton, viscose or wool can be easily dyed in dye-becks.

Make sure you are taking full advantage of this outstanding line of polyester dyes.

Eastman Polyester Yellow RL
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Eastman Polyester Orange 3RLN
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Eastman Polyester Blue BLF
Eastman Polyester Blue 3RL
Eastman Polyester Navy G
Eastman Polyester Black RB

*Try this formula on your next dark navy dye lot.

4% Eastman Polyester Blue 3RL
6% Eastman Polyester Blue BLF
0.6% Eastman Polyester Orange 3RLN
5 g./l. o-phenyl phenol type carrier
Material: Polyester
Bath Ratio: 30:1
Dyed at Boil

Eastman Polyester Dyes

Eastman Polyester Dyes are sold in the United States by **EASTMAN CHEMICAL PRODUCTS, INC.**, subsidiary of EASTMAN KODAK COMPANY, in Kingsport, Tennessee; Lodi, New Jersey; and Greensboro, North Carolina. On the **West Coast** through WILSON MEYER CO., San Francisco, Los Angeles, Portland, Seattle, Salt Lake City. In **Canada** through CLOUGH DYESTUFF CO., LTD., St. Laurent, P.Q.

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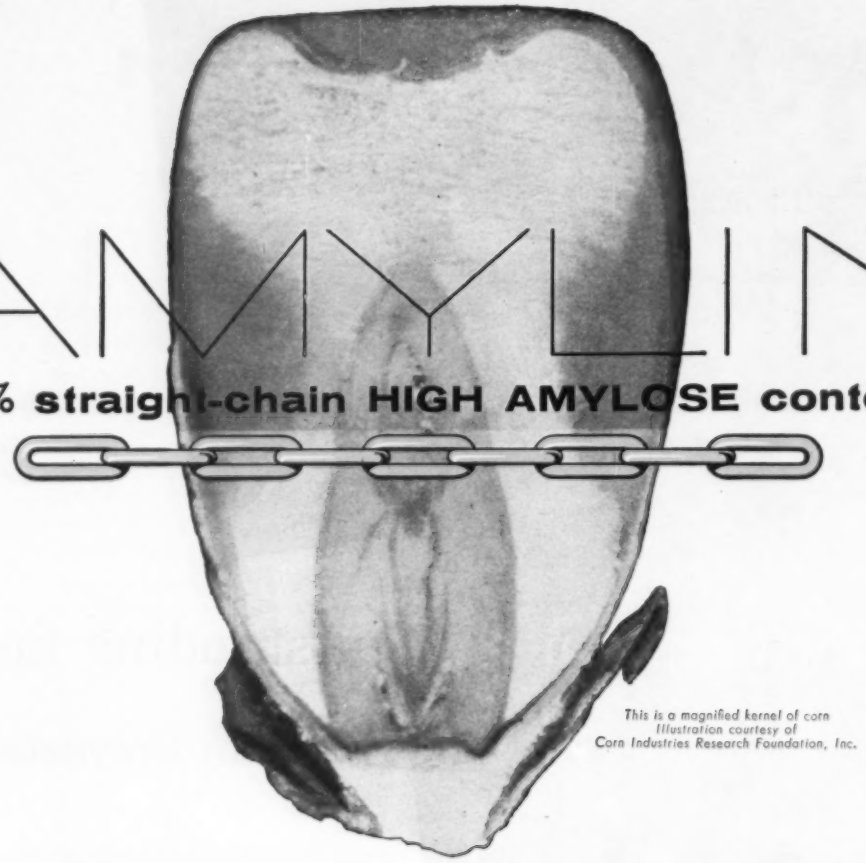
AMYLIN

55% straight-chain HIGH AMYLOSE content



This is a magnified kernel of corn
Illustration courtesy of
Corn Industries Research Foundation, Inc.

A RADICAL GENETIC CHANGE

science and nature synthesize a new chemical polymer

NOW AVAILABLE in semi-commercial quantities. A radically altered natural starch polymer that contains 50-55% amylose —the straight-chain molecular component of starch.

This is the first major genetic advance leading to a potentially feasible starch containing 100% amylose. It's an exciting genetic achievement. Until now, the amylose content commonly available never exceeded 27%.

Geneticists have worked for many decades to develop special qualities in hybrid corn. Such as high yield, drought and insect resistance. A change in chemical structure was first accomplished industrially by the breeding of corn containing 100% amylopectin which NATIONAL introduced as AMIOCA in 1943. High amylose corn represents another major industrial accomplishment in the new area of plant breeding intended to alter the polymer structure of the starch itself which NATIONAL is introducing as AMYLIN®.

Milled from high amylose corn in the same way as ordinary starch, AMYLIN represents a marked step towards the unusual properties of amylose itself: Film formations, with greater strength than ordinary starch films. With improved water, grease and oil resistance. Flexibility. Unusually strong gels. Adhesiveness.

To the inquiring mind, these unusual properties suggest a variety of applications: Soluble and digestible packages for instant coffee, meats, vegetables, fish, fruit. Butter. Vegetable shortenings. Soluble packages for soap powders and insecticides. Grease and oil resistant coatings. Water and humidity resistant binders. Improved textile sizes and finishes, etc.

An invitation is extended to all who are interested in exploring the properties of this new high amylose starch.

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The Art of Listening

- **Good communications require a two-way flow of information, both from you and to you. So the ability to listen well is as important as the capacity to express yourself clearly.**
- **Here are some tips that can help you do a better job of listening.**

By M. A. CROSS, Director of Industrial Relations, Dan River Mills, Inc.

The business world has never been more concerned and more dissatisfied about its communications than it is today. In advanced management courses for business executives, in articles in management publications, in talks at management conferences, a recurring theme is the need for better communications. This awareness is a healthy development because it recognizes that in an increasingly complex business operation, the flow of correct, reasonably adequate information is essential.

Akin to the concern about communications is the awakening interest in listening. Despite the varied forms of written communications–letters, reports, memos, procedures, etc.–the personal, spoken communications are still of supreme importance.

In the normal course of running his job, the supervisor largely depends on the spoken word to issue instructions and orders, to change assignments, to adjust schedules, to correct quality problems, to review progress with his superior, and to discuss problems with his associates or his subordinates. In the supervisor's relationship with his employees, there is no substitute for the spoken word.

Unfortunately, in the face of our dependence on spoken communications, many of us are not very good at listening. Yet the ability to listen well is equally as important as the capacity to express ourselves clearly. We may find more satisfaction in talking, but we may learn more by listening.

How can we improve our ability to listen? Perhaps the first step is to recognize some of the bad habits that are so easy to acquire. This may appear to be a negative approach; but like the old Southerner said, "You have to find out what ain't sometimes to understand what is."

For example, there is the habit of "fake" listening, of appearing to hear what is being said when actually your mind is on something entirely different. This is likely to occur when you are engrossed in a particular problem, are under pressure to get it solved, and are busy accumulating and analyzing facts in order to determine the best course of action.

At this precise time, a subordinate comes to you to discuss a different situation that is bothering him. You listen courteously and appear to hear what he says, but in fact your attention is divided. You can't do a good job of listening under the circumstances.

Or take the case of the dubious listener. This is the gentleman–it might be any one of us–who has the preconceived notion that he is not going to like or believe or trust what the speaker has to say. The speaker may be an employee who frequently complains, an employee who on a previous occasion colored the facts in reporting a situation, or a person whom the listener happens to dislike.

The point is that the dubious listener approaches the conversation in a questioning frame of mind and is more intent on finding the flaws or mistakes in what is said than in obtaining a full, logical disclosure of the facts the speaker is trying to get across.

Then there is the tired listener. In our relations with employees, we will always find a number of them who are inarticulate, express their ideas poorly, speak in a slow, monotonous fashion, or go all around the barn to get to the point.

The tired listener, faced with this halting approach, is more concerned with ending the discussion than in exerting the effort to find out what the employee is groping to say. This habit is an unconscious action, but you must be aware of it in order to curb any tendency to be a tired listener.

One other habit is anticipating what the other party will say when he has barely commenced to talk. For example, an employee comes to you to state a problem he has encountered in running his job. After a few words, you recognize what his problem is and begin to frame your answer. You are so anxious to get on with your answer and comments that you stop listening to what he is trying to tell you and may fail to gather the full significance of what he is saying.

Perhaps you could name other habits that result in a poor listening job, the bad habits it's so easy to slip into, especially in the light of the manifold demands on a supervisor's time.

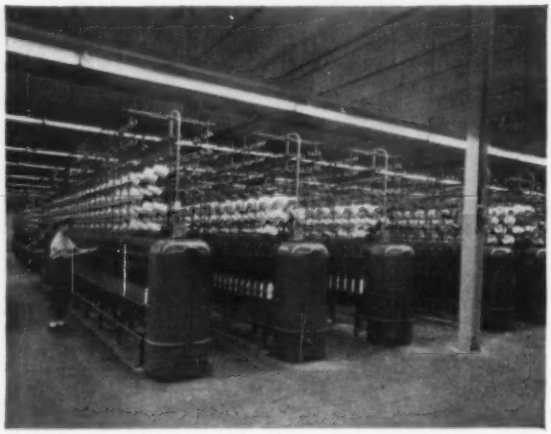
Now here are a few considerations that may be of value in improving your listening techniques.

First, you should be convinced that the ability to listen is an essential tool for supervision. In the modern textile plant, sound decisions and judgments in every phase of the operation are based on accurate information. Good communications require a two-way flow of information,

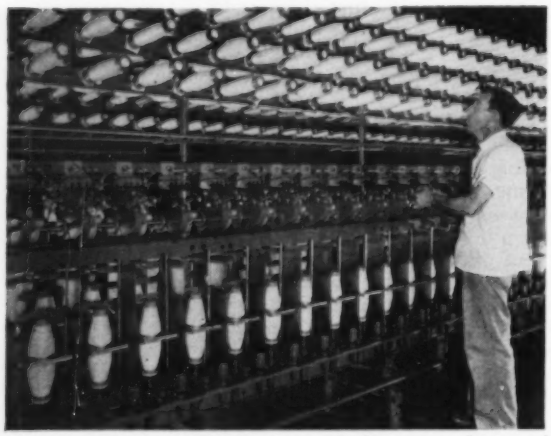
CONTINUED ON PAGE 170

See Some of Many Results You Get

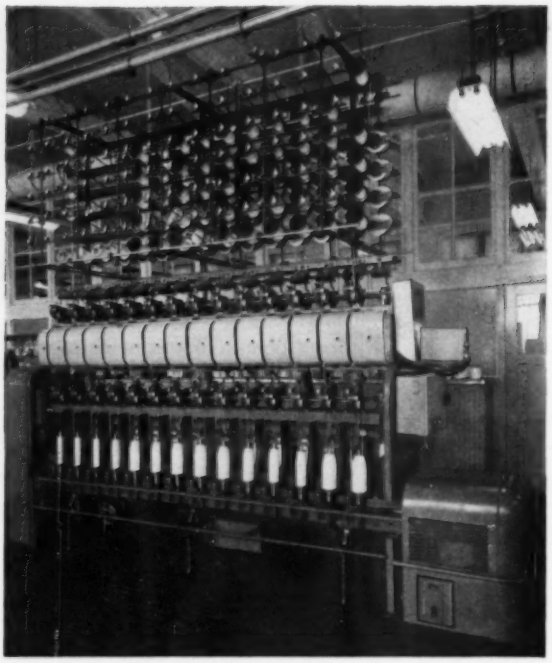
from the Model 10 Ring Twister



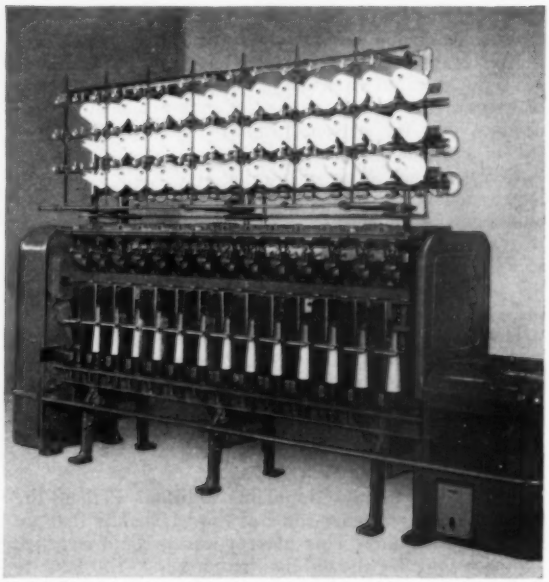
Worsted, spun synthetic and metallic yarns can be plied from cones, and taken up on large packages.



Glass yarn can be twisted from pirns to double-taper packages, and be used for filling and warping without rewinding.

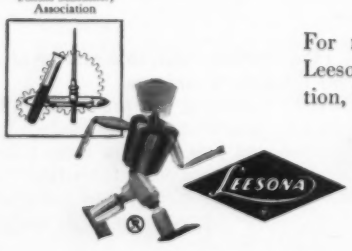


Only the Model 10 can use the No. 511 Saaba* attachment, to process uniform, top quality Saaba, the last word in textured yarn.



Model 10 can take up yarn on cones, also produce straight wind, taper-top, and double tapered packages (filling or warp wind).

Member American Textile Machinery Association



23.7.7

For more information on how the versatile, low-maintenance, Leesona Model 10 Ring Twister can improve your twisting production, write for Bulletin 10-A.

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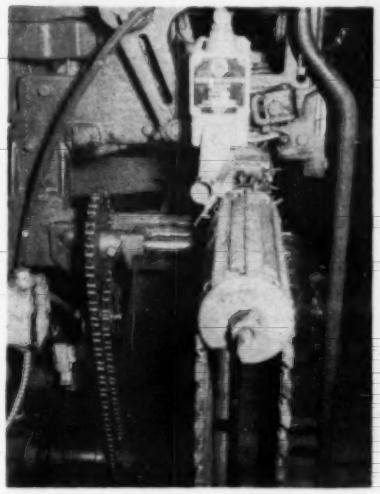
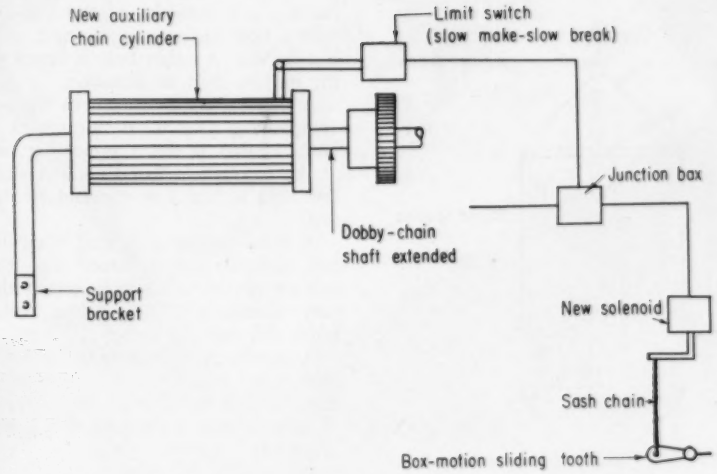
New Fabrics on Box Looms Are Made with Short Chains





On a multishuttle loom with a dobby, one or more dobby jacks are used to operate the box motion. In weaving many of the newer fabrics, all the dobby jacks are used to weave the ground fabric and the selvages. Therefore there's no way to shift the shuttle boxes.

Furthermore, in some of the newer fabric constructions, the weave and box repeats are not even multiples, which requires an extremely long pattern chain. For instance, if the weave repeats on a short cycle such as every 8 picks and the box change repeats on a long cycle that's not an even multiple of 8, say 134 picks, it is necessary to build a pattern chain of 536 bars with 67 repeats of the weave and 4 repeats of the pattern.

The method shown in the accompanying sketch changes the shuttle boxes in predetermined order without using dobby jacks. As a result, the chain with 536 bars is reduced to a pattern chain only 8 bars long with a box chain 67 bars long.

The new method starts with an extra pattern-chain cylinder connected to the regular cylinder shaft as an extension. This cylinder works the box motion only, and a regular pattern chain with pegs is used for box-motion indication.

A time-delay limit switch is mounted over the row of chain pegs, a junction box is mounted on the loomside, and a solenoid is fastened to the loomside over the box motion. Electric current comes from the loom's 12-v. transformer.

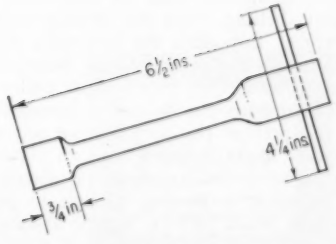
The solenoid is connected to the sash chain of the box motion, which is cut off from the dobby jacks.

As the pattern-chain pegs rotate by the limit-switch lever, the switch energizes the solenoid; and the solenoid in turn actuates the sliding tooth of the box motion to change the shuttle boxes as desired.

For a two-box loom, only one switch, one solenoid, and one row of pegs are needed.

For a four-box loom, two switches, two solenoids, and two rows of pegs are needed. (K-4078) *C. F. Birch, Charlotte, N. C.*

Tool Presses Dents out of Bobbin Skewers



Our Barber-Colman bobbin skewers frequently become dented and crimped so that they no longer skewer properly.

We devised a tool, shown in the sketch, that quickly and easily straightens out beat-up skewers. The end of the tool, ground to fit the four-side threads of the skewer, is twisted and forced inside the skewer by turning the T-handle.

The operation takes less than 1 min. and salvages many skewers that normally would be thrown away. (K-4093) *Ralph Barnes, Yatesville, Ga.*

A Dash of Ammonia on Fabric Takes Ink off Knitter's Hand

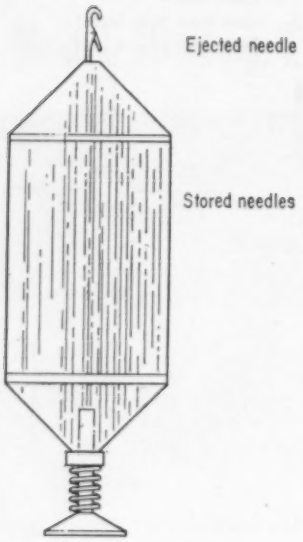
To identify each roll of knitted fabric, our knitters sew on a tab numbered with a stencil and marking ink.

But in inking the tab, the operator often gets ink on his hand, which later comes off on yarn or fabrics being handled. The ink will not wash off the operator's hand.

But the ink comes off readily if the knitter wets a small piece of scrap fabric in ammonia and wipes his fingers with it. Only a few drops of ammonia are needed. Then the knitter dries his hand carefully. (K-4028)

Knitting Needles Are Stored in a Self-Dispensing Case

So that our knitting fixers can select needles rapidly and without injuring their hands, we store spare needles in individual dispensers much like those used at soda fountains to dispense straws.



A dispenser case is made of transparent plastic that is conical at both the top and bottom. At the top, we bore a hole big enough to eject only one needle. Another hole is bored in the bottom $\frac{3}{8}$ in. in diameter.

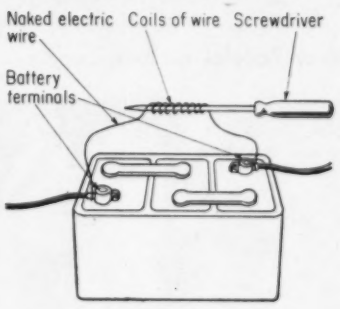
A metal base, as shown in the accompanying sketch, is turned in a lathe so that it has a projecting rod at the top with a flared end. A shallow hole is bored in the end of the rod.

A spiral spring is placed over the rod, and the rod is forced into the bottom of the case by distorting the case momentarily. A sliding collar holds the rod.

A needle is ejected from the dispenser by mashing the plastic case down so that the spring is compressed. When the case is released, the spring returns to its relaxed position.

As needles are used, others slide down the conical base so that one needle is always ready to be ejected. (K-4031)

Automobile Storage Battery Magnetizes Small Tools



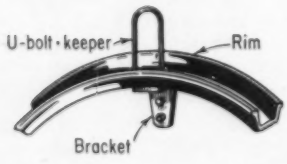
Small tools such as screwdrivers and scissors can be magnetized in only a few seconds with an auto battery. Strip the insulation from a piece of scrap electric wire about 18 ins. long, and wrap the center of the wire a few turns around the screwdriver to be magnetized.

Then fasten the ends of the wire to the two poles of the auto battery. Leave the connections to the car. Either a 6- or 12-v. battery can be used, and the battery is not damaged.

Leave the tool connected to the battery for only 1 to 2 secs. The effect of magnetization will depend on the quality of steel in the tool. But magnetization does not last long. (K-3851)
L. F. Mercier, Osaka, Japan

Discarded Auto Wheels Make Good Hose Hangers

I am a welder in the central maintenance department of a plant; and for the past 12 years I have used the hanger shown in the sketch for hose, electrical leads, and cables.

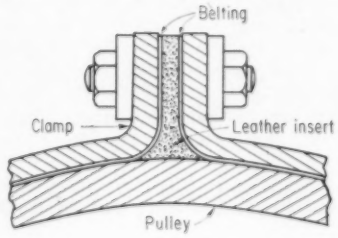


The hanger is made from a discarded auto wheel cut into three sections with a torch; and each section makes a complete hanger.

I weld a bracket on the back of the wheel section to fasten it to a wall. Then I weld a U-bolt keeper inside the front to hold the hose in place.

If the holder is to be used for a short fire hose, I paint it a brilliant red. For other types of hose or cables, I paint it to match the wall where it's mounted. (K-108) *Carl Harris in The Stabilizer*

Insert for Belting Fasteners Absorbs All Pulley Shock



We use two wrought-iron plates for joining the ends of rubberized-fabric belting when the belting isn't endless. But often the belt isn't pliable and a gap is formed between the plates as they pass a small pulley. Consequently the belting is damaged.

To prevent this damage, we add a leather insert between the two plates as shown in the accompanying sketch. The insert is flexible enough to go around small pulleys, and it absorbs all shock at sharp turns. (K-4085)
S. Brown, Pernambuco, Brazil

$25 KINK WINNER

The $25 prize for the best Kink in March was won by:

J. Z. Batten, Social Circle, Ga., for his Kink "Fittings, Compressed Air Transfer Liquids."

WATCH FOR NEXT MONTH'S WINNER

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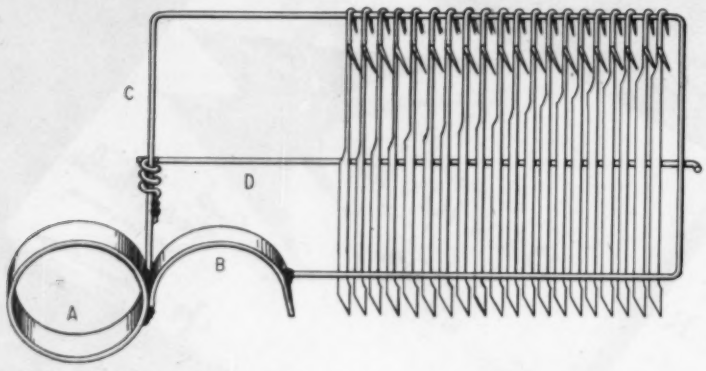
Replace Cylinder Needles Quickly in Lots of 50



It used to take our fixers a long time whenever they had to replace a large number of cylinder needles. They had to pull them out needle by needle from a box, check them, and then place them in the cylinder.

Now our fixers load the frames wherever possible with lots of 50 needles per frame so that the needles are ready for use when needed.

Weld wide ring *A* on one-half of ring *B* along with a stiff piece of steel wire *C*, as shown.

Bend the wire at right angles so as to form a frame for the needles. The size of the frame depends on the type of needle used. Secure a three-turn spring to the frame, and fasten another pin wire at the same point.

Place needles with hooks on the top wire of frame. Put butts under the bottom wire of the frame. Spring center wire onto the back of the needles. The needles are now held firmly in position ready to be placed in the cylinder.

Place second finger through ring *A* and first finger through half ring *B*. With the aid of pliers, you can now remove individual needles by grabbing the butt of the needle and sliding it into the cylinder groove. (K-3483) *H. J. Haas, Martinsburg, W. Va.*

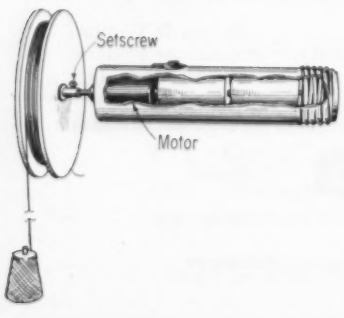
Paraffin and Oil Make Drill Bits Self-Lubricating

When constant drilling in a drill press is done, the drill bit must be oiled frequently. For many years, we touched the bit often with a paint brush soaked with cutting oil. But this method required constant attention.

We now let the drill bit lubricate itself. We use a block of paraffin 3 ins. square and 1 to 2 ins. thick and cut a shallow basin in the top surface.

The paraffin is placed over the area to be bored, and the basin is filled with cutting oil. The oil and paraffin combine for an excellent cutting compound, and the drill is self-lubricating. (K-3629)

Use a Flashlight To Make Portable Fan or Sample Reel



You can make a small portable fan or a sample reel by positioning a small flashlight motor on top of two batteries in an ordinary flashlight casing with a spring bottom and switch.

The motor has a shaft on which the reel is fastened by means of setscrews.

When the motor is used for taking skein samples, it is positioned horizontally over the yarn package to obtain sample skein. (K-4032) *H. J. Haas, Martinsburg, W. Va.*

Keep Air out of Coal Bins To Avoid Spontaneous Fires

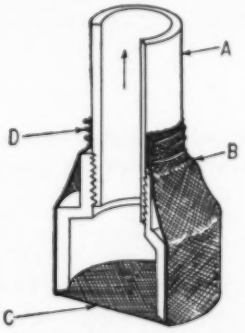
Spontaneous combustion in coal bins or coal pipes is caused by the infiltration of air between large lumps of coal. And fires from spontaneous combustion usually start near the edge of a bin and not inside where air is excluded.

One way to prevent these fires is to dump coal in the bin so that it will not roll. Do not dump from one point continuously to form a conical pile, as from a conveyor belt or crane. By dumping from only one point, large lumps always roll down the sides and fine coal remains in the center. In this way, fine coal is separated from the coarse.

So it's best to dump from several points if possible.

On outside coal piles, you can prevent spontaneous combustion by running a bulldozer over the pile to pack the coal. (K-3004)

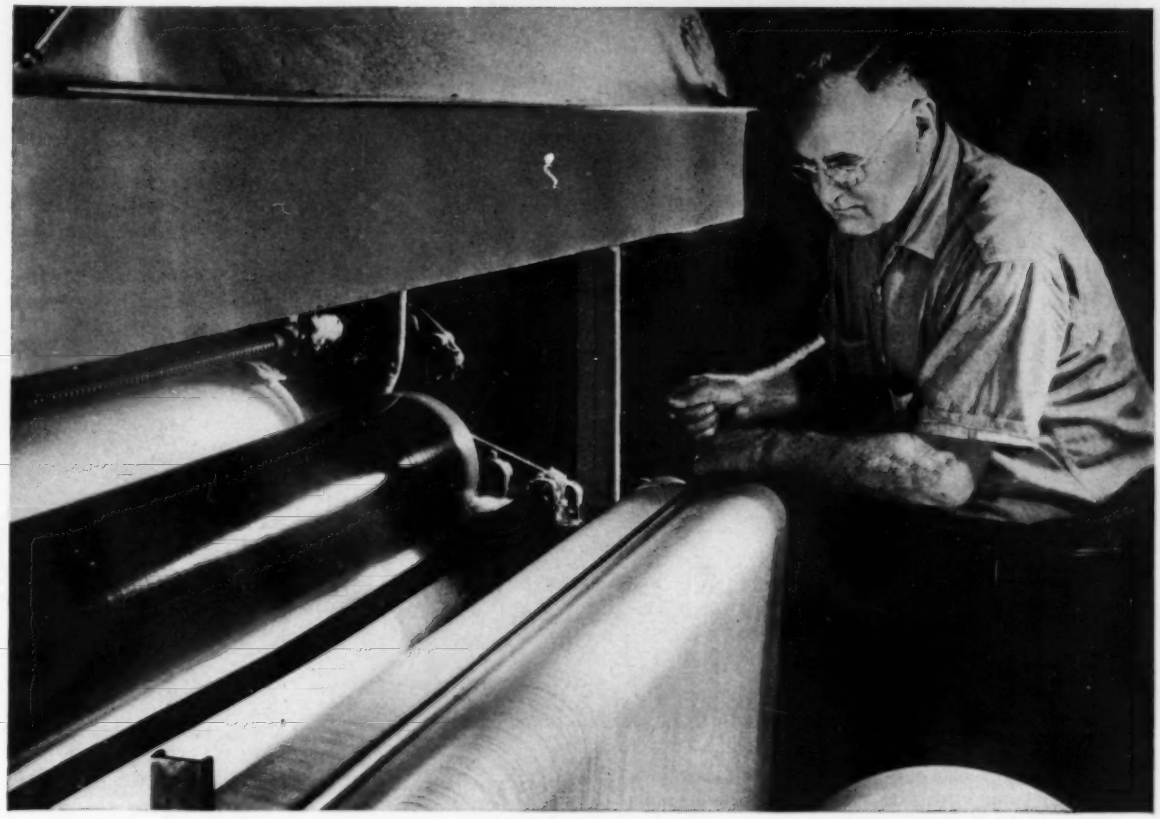
Simple Filter Arrangement Cleans Oil Line Continuously



Impurities in oils used to be one of our big problems when we were teazing woolen blends, carding worsted blends, conditioning at winding, and conditioning at wet doubling.

We made a simple oil filter to stop this trouble by fitting oil feed pipe *A* from the tank with coupling *B* to give a large area of filtration. The coupling is covered with several layers of nylon-mesh fabric *C* that acts as a filter cloth. The cloth is then secured to feed pipe *A* by means of rubber band *D*.

The filter cloth can be easily inspected and changed whenever necessary. (K-4095) *H. A. McLean, Huddersfield, England*



How Modern Mills Improve Slashing Operations

Time after time, mills around the country report greatly improved slashing operations with TEN-O-FILM starches. Compatible with most adjuncts and available in a wide range of fluidities, TEN-O-FILM users praise its many unique operating advantages.

TEN-O-FILM is ready to use after cooking thirty minutes. Many mills find need for less plasticizer than with conventional starches. The stability of TEN-O-FILM keeps size usable despite prolonged heating and cooling. Size made with TEN-O-FILM does not congeal or "skin over" at lower-than-normal temperatures . . . it can be held for reasonable shutdown period without gelation.

TEN-O-FILM offers several additional features including unequalled clarity of film, economy in desizing and dyeing.

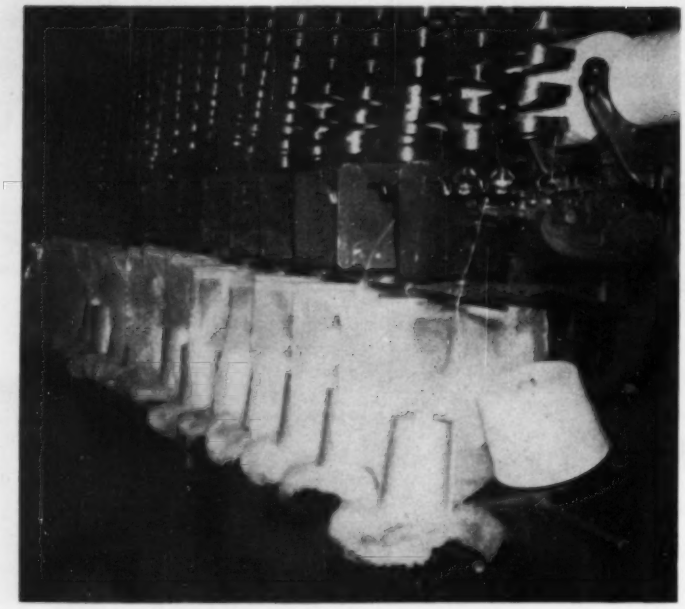
Our technical service group has had wide experience and marked success in adapting this versatile starch to the varied needs of many textile applications. The production advantages and process improvements achieved by TEN-O-FILM can be fitted to your needs by consulting our textile technicians. Contact our nearest sales office or write direct.

TEN-O-FILM® starches

Other fine products for the Textile Industry: EAGLE® • FOXHEAD® CLARO® • GLOBE® starches • GLOBE® and EXCELLO® dextrines

CORN PRODUCTS SALES COMPANY 17 BATTERY PLACE, NEW YORK 4, N.Y.

Polyethylene Film Keeps Ends From Tangling



We used to have trouble in our spinning and twisting operations caused by tangled ends at the supply package. Any draft of air would cause the ends to jump from one cone to another.

The problem was solved by fabricating shields of polyethylene film and slipping them on bars between each package as shown in the accompanying photograph.

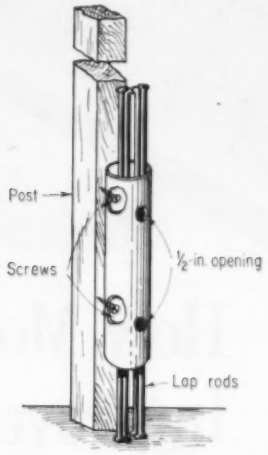
We also find that the film makes a good protective covering for finished top yarn. The bags hold moisture content even and protect against contamination and ruffling. (K-100) *Pacific Mills Div., Burlington Industries, Halifax, Va.*

Knitted Tubing Over Temples Keeps Cloth Free of Oil

We run gray fabrics of natural-color cottons on many of our single-shuttle looms. Because our loom temples reciprocate, we have always had a lot of black oil spots in the woven fabric.

We have eliminated much of this oil by slipping knitted tubing over the butts of temples. The tubing absorbs most of the oil as it spatters. As soon as the tubing becomes stained, we replace it. (K-3370)

Lap-Rod Holder Prevents Accidents



In our mill, card-room operators used to drop unused lap rods on the floor or in any other convenient spot. This practice can cause a serious accident if an operator steps on one of the loose rods.

We finally had an accident, and I decided to do something about keeping lap rods off the floor. My thinking resulted in making a lap-rod holder that resembles an old-fashioned umbrella stand.

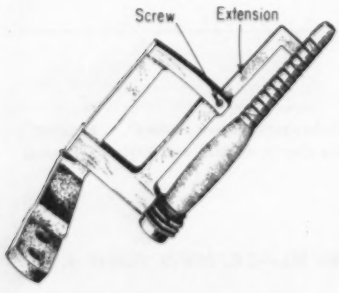
The holder is made from a piece of old pipe 30 ins. long and wide enough to hold four rods. The pipe is screwed to a nearby post in a vertical position about 12 ins. above the floor.

The only trick is putting the screws through the pipe from the inside. This problem was solved by boring a ½-in. hole opposite the screw hole so that a long-bit screwdriver could be used to put $\frac{5}{16}$-x1-in. screws through the ⅜-in. holes in the back of the pipe. (K-4080)

Altered Bobbin Transfer Arm Prevents Damage at Loom

When we wind certain types of yarn on our loom bobbins for S-6 looms, we cannot tie knots in the yarn. On coarse yarn in particular, we cannot tie knots. As a result, many bobbins of filling only one-third to one-half full have to be transferred at our loom magazines.

Normally these small bobbins do not transfer without hanging occasionally in the magazines, and they: (1) make warp break-outs, (2) break magazine and loom parts, (3) break bobbins, and (4) cause many other faulty conditions.

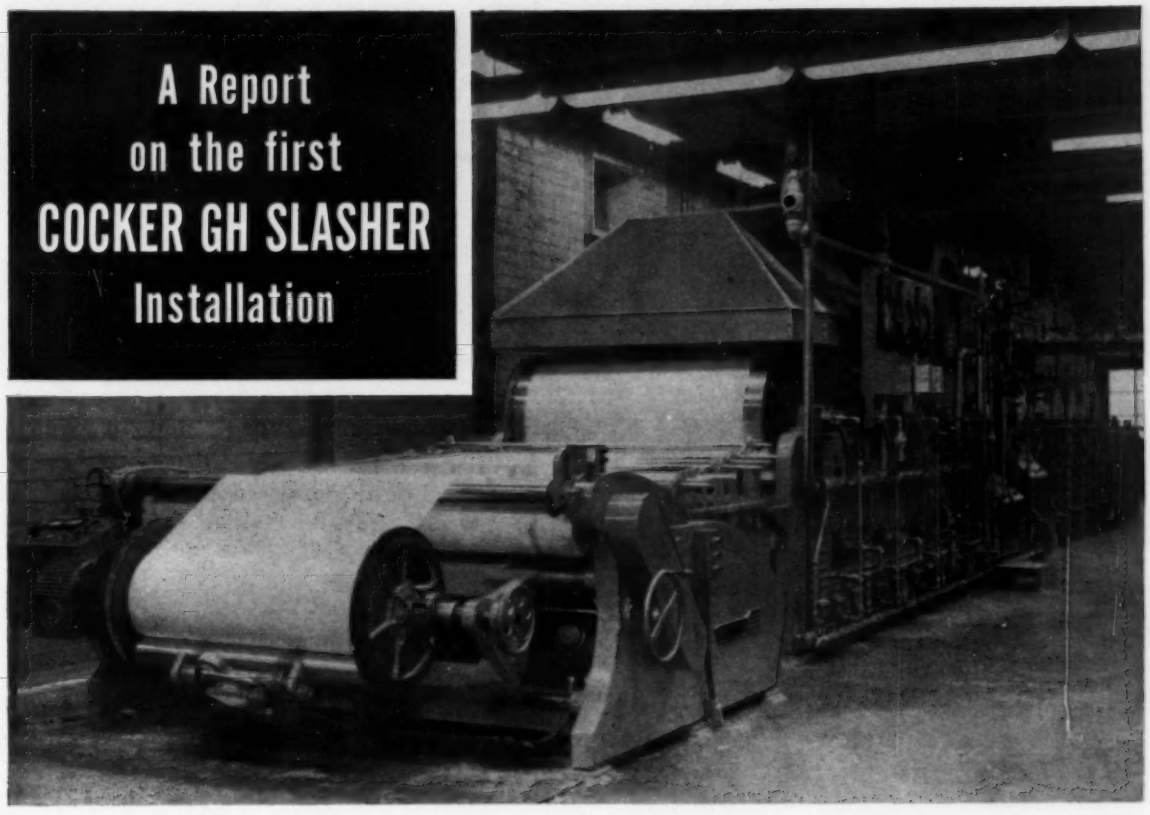


About three years ago, we rebuilt all the transfer arms on our magazines so that they transfer small pieces of filling without damage.

We bored a hole in the end of each transfer arm and fitted in the extension as shown in the accompanying sketch. The extension is a pressed fit and is held tight with a recessed hollow-head setscrew.

Magazines are filled with two complete bobbins of filling to every one small piece of filling. In this way, tilting of bobbins and faulty transfers are eliminated. Now we get a smooth transfer on both full and partly full bobbins. (K-4019)

A Report on the first COCKER GH SLASHER Installation



A Complete Cocker GH Slasher Installation at Morgan Mills, Springfield Division, Laurinburg, N. C.

- **1540 pounds per hour** *(combed yarn)*
- **15 percent pick up**
- **40 percent penetration**

This, the first complete Cocker GH Slasher Installation, has fully proven the claims made for it at the Greenville Exhibition.

Operating with 6,400 ends 40s single combed yarns, this GH Slasher has been running at a top speed of 135 yards per minute and a production of 1540 pounds per hour . . . with 4½% moisture regain, 15% size pick up, and 40% penetration. This has resulted in a weave room efficiency of 96% and an increase in loom assignment.

The Model GH is unquestionably the World's most modern, most efficient, and most economical slasher. Write for full information today.

COCKER MACHINE & FOUNDRY COMPANY

IN CANADA:
Contact W. S. Clark
Montreal, Canada
Oxford 7-2242

PLANT & OFFICES
at Ranlo, N. C.
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WORLD'S LARGEST DESIGNERS AND BUILDERS OF COMPLETE WARP PREPARATORY EQUIPMENT

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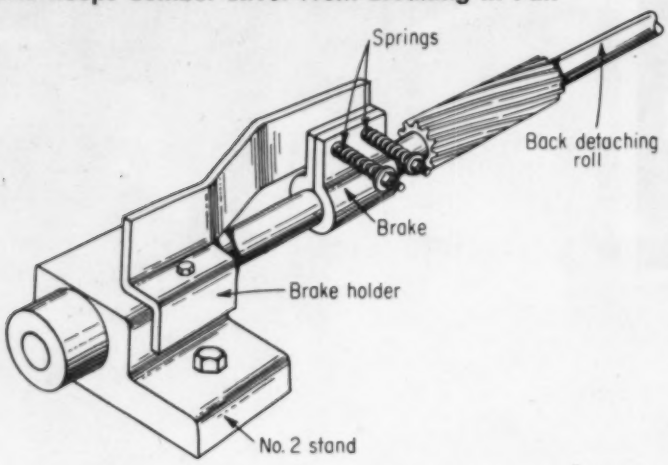
Brake Keeps Comber Sliver From Breaking in Pan



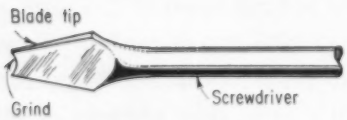
Our old combers used to break a whole side of six slivers in the pans every now and then because the detaching rolls did not come to a dead stop at the end of their movement. The trouble was especially bad immediately after lubrication.

I made a special brake, as shown in the sketch, which consists of a spring-controlled clamp made of laminated resin and a brake holder made of mild steel. The attachment was fastened to the No. 2 stand.

The brake causes the detaching rolls to come to a dead stop every time they change direction, and the slivers are no longer broken. (K-101) *Slomo Geller, Haifa, Israel*

Remove Tight Shuttle Screws With a Power Drill Press

To remove a shuttle-eye screw that is hard to remove, use a bench drill press. Chuck the blade from a screwdriver into the drill press.



Apply pressure on the screw with one hand; and with your other hand, turn the belt of the drill. The screw will then come out easily.

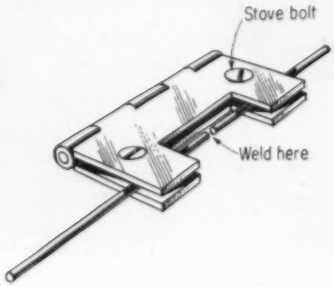
If one side of a screw head in a shuttle is broken off, grind a screwdriver-blade tip to a half-moon as shown in the accompanying sketch. Use this blade in a drill press just as for a tight screw. (K-4040) *Dick Byrd, Greenwood, S. C.*

Discarded Temple-Roll Pins Make Soft Rivets and Studs

When the brass pins for temple rolls in loom temples become worn, they are discarded. But with a little work, these pins make excellent soft studs, punch-outs, and rivets.

To make rivets from a pin, grind the pin on a sanding belt until it's just a little larger than the hole it is to fit. Then drive the pin in the hole with one sharp blow of a light hammer for a forced fit. Mushroom the ends with a ball-peen hammer to lock the rivet. (K-3726)

Hinge Holds Two Steel Rods To Be Welded Together



When you have to weld wires or small rods together, a common door hinge will let you make the weld accurately.

Use a hinge 4 ins. long, and cut out a 1½-in. square in the center of both leaves. Then weld one leaf of the hinge to a stand for a holder if desired.

Position the rods to be welded between the hinge leaves, and tighten the leaves together with two flat-head stove bolts. After the rods are welded, you need only to loosen the screws and the welded rod will drop out. (K-4084)

$500 FOR BEST KINK IN 1959

$25 for Best Kink Each Month—Plus $5 to $10 for Every Kink Accepted

A KINK . . . is any idea that will cut costs, improve quality, reduce work, increase production, or make work easier.

You can send in as many Kinks as you want to any month.

All Kinks are paid for on acceptance.

Previously published Kinks not eligible for prizes.

Let us know if you don't want your name published.

Prize winners are selected by TEXTILE WORLD readers. At least 300 will be asked each month to vote on the best Kink that month. In case of ties, duplicate prizes will be paid.

Send Kinks to:
Kinks Contest, TEXTILE WORLD
201 E. Coffee St., Greenville, S. C.

VICTOR

A KEESTAR PRODUCT

Mill Starch

Known for Uniformity for more than 60 years.

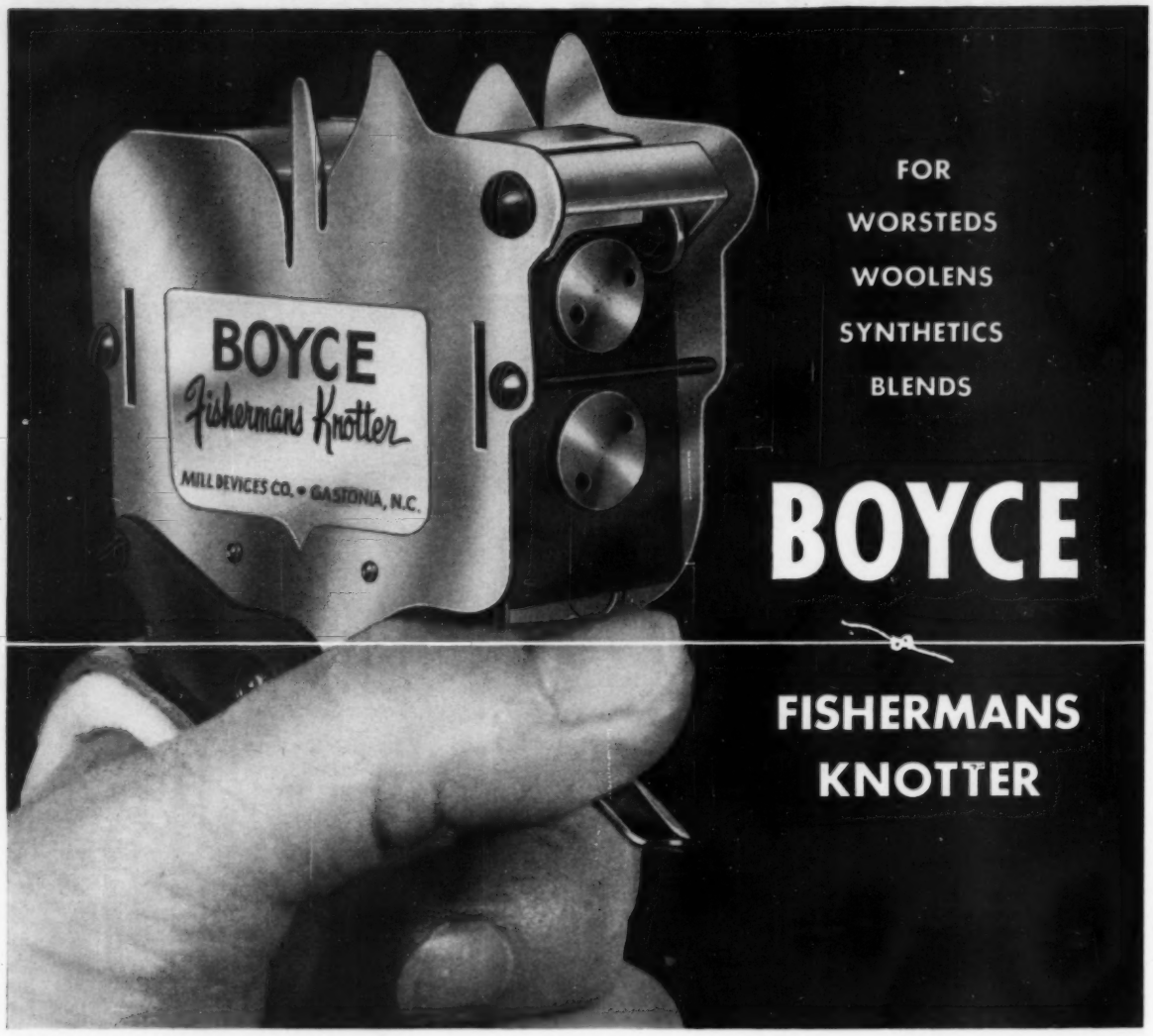
if he's a Keever Man, he's the Weaver's Friend

THE KEEVER STARCH CO. • General Offices • Columbus 15, Ohio

Processors of corn, wheat and blended starches for industry since 1898

Charles C. Switzer, Vice President
TEXTILE SALES DIVISION
318 SOUTH PLEASANTBURG DRIVE
GREENVILLE, SOUTH CAROLINA

Newest addition to a famous family!



Manufactured by the metal craftsmen of Mellor Bromley and Company, Ltd., Leicester, England, this new precision instrument ties a strong, smooth "fishermans" knot—quickly, efficiently and economically—in yarns which heretofore have resisted automatic knotting. Ends are clipped clean and even—and the more tension on the yarn, the tighter the knot.

For complete information send a sample of yarn with your inquiry to:

5 MODELS FROM WHICH TO CHOOSE

MODEL L-20—5 denier to 100 denier in filament and very fine spun yarns.

MODEL L-22—30 denier to 200 denier in filament, approximately 30's in cotton and approximately 45's in worsted.

MODEL L-24—Medium counts in filament and spun yarns.

MODEL L-26—Medium to coarse counts in filament and spun yarns.

MODEL L-30—Coarse counts of filament and spun yarns.

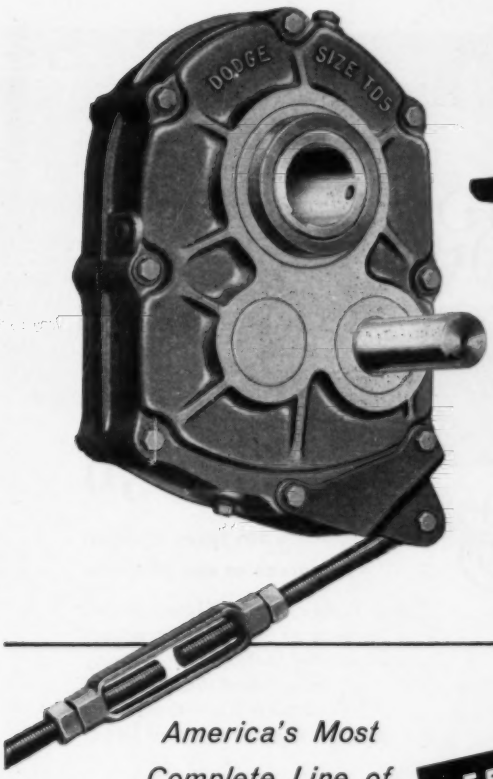
Note: Complete repair and service facilities for all models available at our Gastonia plant.

MILL DEVICES COMPANY

A DIVISION OF

A. B. CARTER, INC., GASTONIA, NORTH CAROLINA

Exclusive Distributors in the United States, Canada and Mexico for the Boyce Fishermans Knotter



Torque-Arm

THE DODGE DEVELOPMENT THAT CHANGED THE NATION'S HABITS OF SPEED REDUCTION

America's Most Complete Line of Shaft Mounted Speed Reducers

55 MODELS

- 1 to 200 hp. at 100 rpm!
- Output speeds from 10 to 378 rpm!
- Single Reduction
- Double Reduction
- 5 to 1 Ratio
- 15 to 1 Ratio
- 25 to 1 Ratio
- Any speed ratio up to 150 to 1 obtainable by selection of pre-determined combination of reducer and V-belt drive.

CALL THE TRANSMISSIONEER—your local Dodge Distributor. Factory trained by Dodge, he can give you valuable help on new, cost-saving methods. Look in the *white* pages of your telephone directory for "Dodge Transmissioneer."

In fewer than ten years, the range of Torque-Arm Shaft Mounted Speed Reducers has increased from 6 to 55 models, to meet the ever increasing demand for this improved method of speed reduction.

By eliminating foundation, sliding base and flexible coupling this modern speed reducer has saved untold installation time and untold dollars of cost.

The rugged semisteel housing developed by Dodge has never been improved upon. It is corrosion resistant—and it has the strength to hold bearing seats in line for the life of the unit.

Dodge design provides wide spacing for the bearings. Loads are carried easily, contributing to Torque-Arm's long life and very high efficiency. The gears are finest quality—helical, heat treated steel.

Torque-Arm mounts vertically or horizontally in any position around the driven shaft. It locks to the shaft on *both* sides of the housing. The holes in the output hub provide simple removal with puller. Overload release and built-in backstop are optional.

Dodge Torque-Arm is America's most widely used shaft mounted speed reducer. It is stocked by your local Dodge Distributor. Ask him. Or write us for bulletin.

DODGE MANUFACTURING CORPORATION, 1400 Union, Mishawaka, Ind.

DODGE
of Mishawaka, Ind.

For more data, circle A-74 on Reader Service Card

1910

- **One type of rayon**
- **Two end products**

Back in the Nickelodeon Era rayon was rayon. It was produced in only one strength, one denier, one elongation. This early rayon was limited to use only in ribbon and hats.

1959

- **101 types of rayon**
- **Hundreds of end products**

Today wonderful new Avisco rayons go into all the products illustrated at right . . . and many more! And this is just the beginning. Spectacular new developments are near at hand!

AVISCO® RAYON . . .

Yes, in 1959 rayon is a far cry from the limited product of the early nineteen hundreds. In fact, rayon now represents a huge family of radically different fibers and filament yarns. Each member of this growing family is individually engineered for specific physical properties, mill operations and end uses. American Viscose was and continues to be the leader in gearing rayon to fit the needs of the day . . . and developing highly advanced fibers and filament yarns for the future.

YOU NAME IT! If it's rayon...American Viscose has it!

Every type of rayon staple and filament known can be made by American Viscose . . . the *only* producer you can use as a source for *all* your rayon requirements. And remember, Avisco people have the technical know-how to make virtually any type of fiber or filament a mill wants, with tailor-made packages for specific needs. You name it . . . if anyone can produce it, American Viscose technicians can!

a growing family of engineered fibers

Why do leading mills use AVISCO RAYON as the STANDARD OF CONTROL? Because statistical controls in manufacturing insure peak runability in all textile operations.

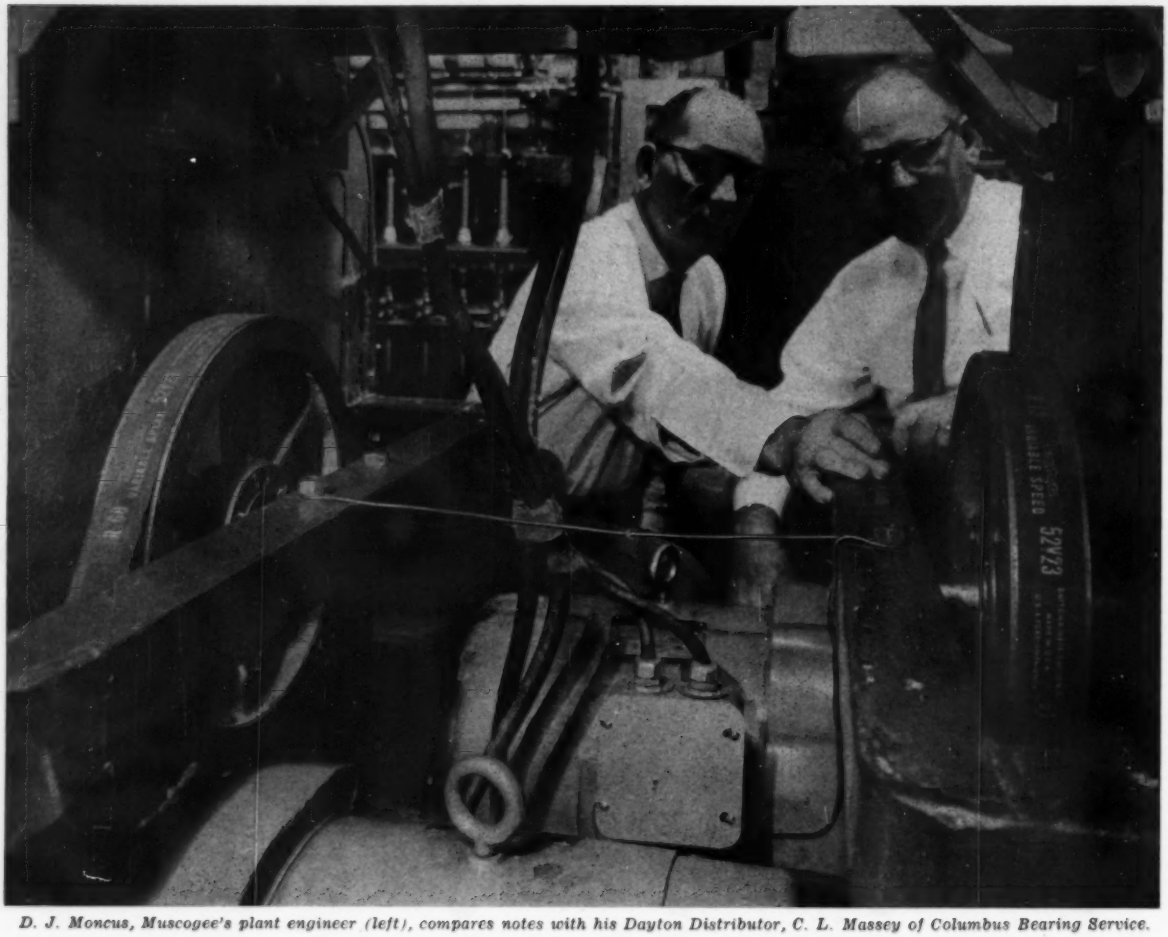
TECHNICAL SERVICE! Avisco Technical and Textile Service Department is the first and most highly respected rayon technical service in America. Experienced service engineers have at their fingertips full size operating mill machinery to give you advanced technical data and on-the-spot mill assistance. Always ready to serve you . . . as near as your telephone.

AVISCO

Look to **AVISCO**® for new ideas!

FIBERS AND FILMS

AMERICAN VISCOSE CORPORATION, 350 Fifth Avenue, New York 1, N.Y.



D. J. Moncus, Muscogee's plant engineer (left), compares notes with his Dayton Distributor, C. L. Massey of Columbus Bearing Service.

Spinning Frame Speed Changed in ⅓ the Time with Dayton V-Belts

at Muscogee Manufacturing Co., Columbus, Georgia

"Dayton Variable Speed Cog-Belt drives save 25-30 minutes every time we change the speed of a Spinning Frame," states Mr. B. D. Cain Jr., General Superintendent of Muscogee Manufacturing Co., Columbus, Georgia.

"Speed changes used to take 35-45 minutes with our old belt drives, and we were never at optimum speed, due to natural variations in motor speed. Now, many of the 150 Dayton Variable Speed Drives are changed in 10-15 minutes . . . or about 1/3 the time it used to take.

"After the speed's adjusted, we lock the Dayton sheaves in line . . . they stay in alignment. We've had trouble in the past with misalignment, causing variations in power and speed transmitted. But that's been ended by Dayton Variable Speed V-Belts and Sheaves.

"Naturally, production increased the minute we eliminated unnecessary downtime with Dayton Variable Speed Drives. And, to top that, we're able to adjust speed to the last turn for the absolute maximum in production from every Spinning Frame!"

©D.R. 1959

Dayton Rubber

World's Largest Manufacturer of V-Belts

Consult the Yellow Pages of your telephone directory for the name of your nearest Dayton Distributor, or write The Dayton Rubber Company, Industrial Division, Dayton 1, Ohio.

For more data, circle A-76 on Reader Service Card

caprolan® TEXTURED YARN SEMINAR

THE NYLON FIBER BY ALLIED CHEMICAL

NEW METHODS FOR NEW YARNS

Textured Caprolan filament yarns are different—and what a wonderful difference!

You'll find it easy to adapt your present methods to the new yarns, with a few minor adjustments. Here are some of the critical areas that should be given special attention for maximum success:

- **creeling methods**
- **tensions and tensioning devices**
- **thread guides and yarn carriers**
- **cutting edges**
- **dyeing and finishing**

Remember, textured filament yarns are precision yarns. You'll get best results if you keep this important fact in mind:

Textured filament yarns and spun yarns are not the same

We'll be happy to get you off to a fine start in the use of Textured Caprolan® in your product lines. Our technical service, end-use development and fiber application staffs are always available to help you.

Fiber Sales & Service Allied Chemical *National Aniline Division*

261 Madison Avenue, New York 16, N. Y.

#8 of a series . . .

For more data, circle A-77 on Reader Service Card

PRIDE!

We at Cone Mills are proud of the role our Company plays in the continuing progress of the textile industry. This has enabled us to grow into the country's largest producer of denims and cotton flannels and one of the more important producers of corduroys, drills, twills, jeans, suedes, towels, wash cloths, print cloths, poplins, plisses, sateens and coverts. Wherever America shops for the finest fabrics, Cone fabrics will always be at the top of the list.

"Where fabrics of tomorrow are woven today."

CONE®

CONE MILLS CORPORATION

Executive Offices: GREENSBORO, N. C. • Selling Organization: CONE MILLS, INC., 1440 Broadway, New York City

New Rayon Yarn

Industrial Rayon Corp. is producing a flat, straw-like monofilament rayon yarn for use in upholstery and drapery fabrics. It is called Strawn.

The yarn is produced in 450 and 1,250 den. and in bright and dull lusters.

Both deniers are priced at $1 per lb. for spools and cones, $1.05 for tubes, and $1.10 for skeins.

Enka Fiber 500

Fabrics of an experimental regenerated cellulosic fiber, Enka Fiber 500, developed by American Enka Corp., were exhibited at the Textile Research Institute's meeting in New Work City.

Fabrics included an all-Fiber 500 and 65-35 blends of cotton and Fiber 500 in prints and solids, some preshrunk and resinated for wash-and-wear.

Fiber 500 can be stabilized by mechanical compressive shrinkage. Progressive shrinkage of the fabrics is close to cotton and much less than rayon.

Orlon Cantrece

The Du Pont Co. has adopted the trademark Orlon Cantrece for its new filament acrylic yarn.

Orlon Cantrece made its first appearance in Paris in knitted ensembles by Givenchy.

Nylon Typewriter Ribbon

Standard Products Corp. is producing a new nylon typewriter ribbon called Super-Sharp 2,000. The ribbon is made from fabric made by Burlington Industrial Fabrics Co.

The ribbon has been designed to produce print-like work. The fabric is free from lint, eliminating typeface clogging.

The high strength of the fabric permits a thinner ribbon so that nearly three times as much ribbon may be coiled on a standard spool.

Ban-Lon Tricot Fabrics

Ban-Lon tricot fabrics and garments are now available, Joseph Bancroft & Sons Co. announced. The fabrics are knitted of permanently crimped Textralized yarn. The crimping provides additional evaporation surfaces and thereby improve the absorption properties of the fabric.

Ban-Lon tricot fabrics are resistant to pilling, runs, shrinking, and stretching and have greatly improved affinity for dyes.

The fabrics are now being produced by several mills. As in the case with all fabrics carrying the Ban-Lon trademark, Ban-Lon tricot must meet specific quality and performance standards established by Bancroft.

Dope-Dyed Dynel Fibers

Dynel fibers are now available in four new dope-dyed colors: green, marine blue, pewter, and caramel. These new colors bring the number of Dynel dope-dyed colors to 11.

The new colored fibers are being produced in both standard and high-shrinkage deniers. The standard denier is labeled Dynel 80 and priced at $1.40 a lb. The high-shrinkage denier is labeled Dynel 83 and is priced at $1.45 a lb. The exception is pewter, which sells for $1.30 and $1.35 a lb.

Du Pont's New Rayon Yarns

Du Pont has applied for trademark registration for two of the company's rayon products.

Ondule is the company's trademark for its random-slubbed rayon yarn; and Civona is the trademark for its hollow-filament rayon fashion yarn.

Ondule is available in five deniers: 150, 250, 450, 1,100, and 2,200. Commercial end uses of the product include draperies, casements, curtains, coverings for throw pillows, women's suitings, and sportswear.

Civona is available in 600 den., 20 filament, dull. Its largest use to date is in women's hats; but it is also being evaluated for use in draperies, casements, curtains, and dresswear.

Celanese's New Trademark

Celanese Corp. of America has announced that all deniers of its bulked acetate filament yarns will be sold under the trademark Celaloft.

Celaloft yarns are available in 230, 350, 700, 1,080, 2,100, and 2,700 den.

Celaperm, the company's solution-dyed acetate yarns, will continue to be identified by that term even when the fibers are bulked.

New Upholstery Fabrics

Stroheim & Romann is now offering three new upholstery fabrics, all faced with 100% Du Pont nylon.

They include a traditional beige-and-white damask, a contemporary textured stripe, and a scroll pattern in two shades of beige with a tweedy hand.

Bancroft Fabrics

Joseph Bancroft & Sons Co. has announced that the trademark Bancare has been assigned to the wide range of fabrics produced by Bancroft's new nonresinous process.

Bancare fabrics have improved compatibility for resin treatment and improved wet-and-dry wrinkle recovery.

The company is planning a licensing program for both finishers and converters.

FIBERS YARNS FABRICS

Fabric Patterns by Wright

F. Schumacher & Co. will offer the last fabric patterns to be designed by Frank Lloyd Wright before his death. The company will issue the group on July 1.

The group will include one completely new printed pattern and three completely new woven patterns. The fabrics will sell to the decorator and architect for $25 a yd.

Taslan Spun Orlon Yarns

Du Pont's Taslan process has now been extended to spun Orlon yarns, J. W. Bolmeyer of Du Pont & Co. reported at the National Knitted Outerwear Association's convention. This process is currently being used on acetate, nylon, and Dacron filament yarns.

Taslan-textured spun yarns of Orlon yield greater bulk and loft.

They are now available commercially from Du Pont licensees.

New Lingerie Line

Diamond Mills Corp. has announced that its new 1959 lingerie line is now ready for distribution. The collection includes slips, half slips, gowns, and baby dolls in nylon tricot and Dacron-nylon-and-cotton blends. All have trims of lace, embroidery or ribbon.

Many styles are packaged in polyethylene bags. The styles will retail from $1.59 to $3.99. All will carry the Fruit of the Loom guarantee.

Ribblecloth

Pepperell Mfg. Co. has introduced a new combed, yarn-dyed, pinstriped cord called Ribblecloth.

Weatherbee Coats, Inc., is using this fabric in its rain-or-shine coat. The coat carries Pepperell's exclusive chartered Wash-Wear preshrunk finish with Zelan.

Ribblecloth comes in gray and white, navy and white, or antelope and white.

Long-Length Belting

B. F. Goodrich Industrial Products Co. has shipped nearly six miles of rubber conveyor belting destined for use on the world's longest permanent overland transport belt conveyor system at Ideal Cement Co., Ada, Okla. Five additional miles of belting will be shipped later.

The company credits newly developed high-tension fabrics for the phenomenon of extremely long-length belts. Nyfil fabric, a combination of superstrength rayon with nylon filler, forms the internal reinforcement within the rubber belt. The combination permits belt-operating tensions up to 200 lbs. per in. of width per ply. Resilient Nyfil fabric also shows exceptional flexibility for better troughing and resistance to impact.

Vinylon Fibers

Air Reduction Chemical Co. is now offering imported vinylon fibers (fibers of polyvinyl alcohol) in staple and tow forms for commercial applications.

The company has acquired the United States rights to the process of Kurashiki Rayon Co. Ltd. of Japan and is carrying out development work on the fiber.

Applications of vinylon are being studied for use in industrial fabrics, blankets, upholstery, thread, knitwear, and nonwoven fabrics.

Duofold's New Products

Early this fall Duofold, Inc., will introduce two new products: a four-layer undergarment designed for extreme cold-weather wear; and a high-styled turtle-neck shirt for men and women.

The undergarment is made of four layers: cotton, a combination of cotton and wool, Curon, and nylon tricot. There are insulating air spaces between the layers.

The new line of shirts is available in four colorful fabric combinations of cashmere-finished cotton, stretch nylon and cashmere-finished cotton, two-layer Duofold in cotton and wool, and an insert, high-style neck in cotton and wool.

Du Pont Trademarks Acele

Du Pont has applied to the U. S. Patent Office to register the trademark Acele for its acetate filament yarns. It will be used in all company promotion covering acetate filament yarns.

Avron Fabrics

A new family of fabrics using Avisco XL rayon and called Avron fabrics has been introduced by the American Viscose Corp. Avron is the corporation's trademark for fabrics made of 100% Avisco high-strength rayon or in blends of Avisco XL rayon and other fibers.

Avron fabrics can be made with wash-and-wear finishes and still keep needed tensile strength.

Craftex Mills is producing Avron fabrics for upholstery and Cone Mills for apparel.

Hanes' Fall Sleepwear

P. H. Hanes Knitting Co. has introduced its fall line of infants' and children's sleepers, boys' and girls' pajamas, and adult knitted pajamas.

A new idea in the sleeper field is a two-garment wardrobe consisting of a printed sleeper combined with a pastel sleeper for a mix or match combination. The set retails for $4.95.

Companion pajamas for mother and daughter were also introduced. A snowflake-printed top in brushed cotton is paired with capri pants in women's sizes for $4.98, and in girls' sizes for $3.50.

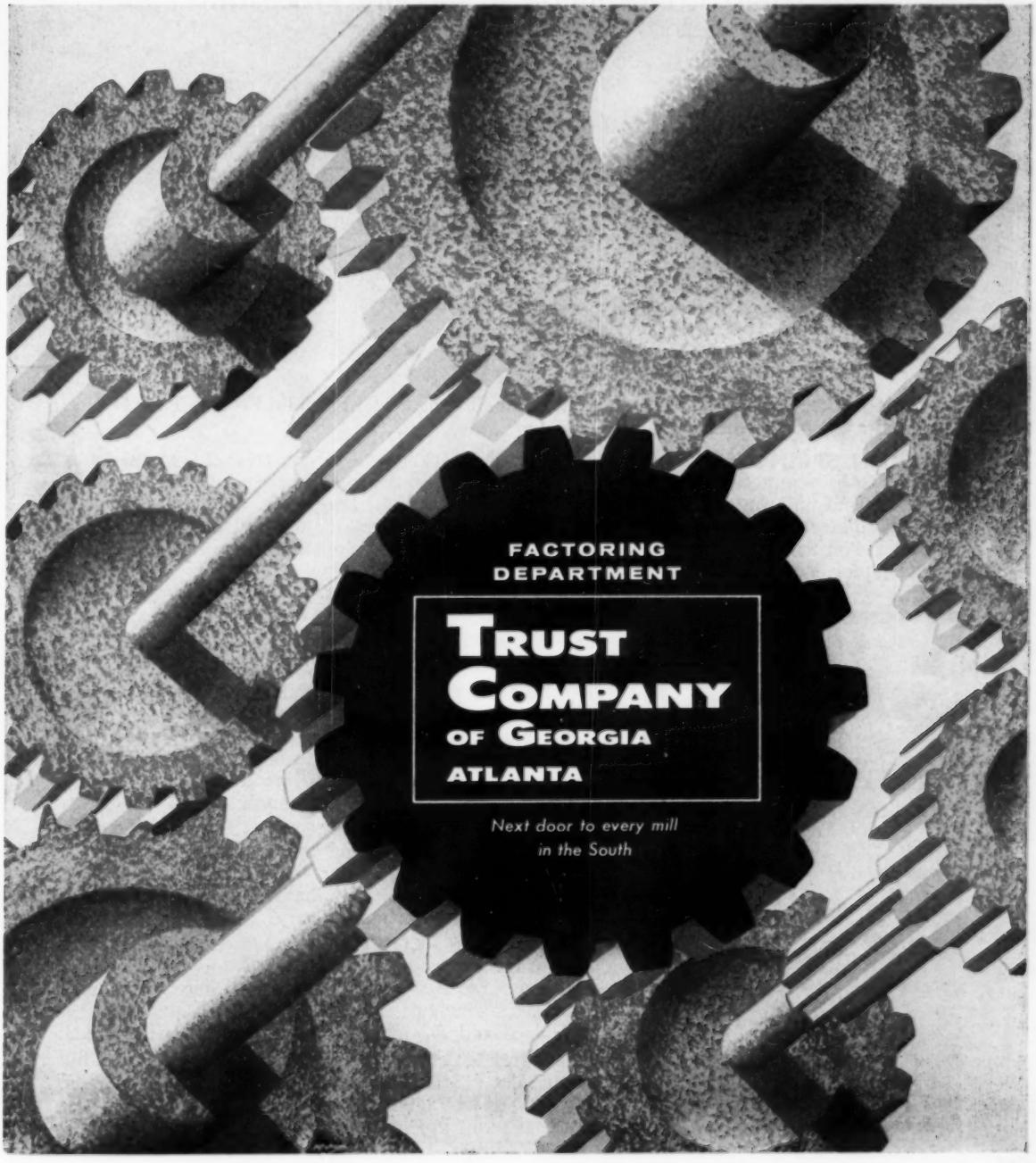
New Type of Cupioni

A new type of Cupioni rayon yarn will be introduced this fall by American Bemberg Co. It is called soft-spun Cupioni and has a more-open filament and a softer hand than regular Cupioni.

Fabrex will combine it with acetate for women's and men's wear.

SOUTHERN INDUSTRIAL GROWTH

. . . has made tremendous contributions toward Dixie's surging economy! Since 1939, more than 22,000 industrial plants have been built in the South . . . and teamed with existing Southern industry, the value of goods produced has increased from $11 billion to over $62 billion. • Today, the South's share of the nation's industrial activity is surprisingly large. For example, the South now produces 80% of all cotton textiles, 36% of the nation's total in the chemical field, 32% of all lumber and 25% of all processed food. Also the area produces 56% of the nation's petroleum and minerals and 32% of all agricultural products. • As the only bank in the South with a **FACTORING DEPARTMENT** the Trust Company of Georgia has been privileged to serve as a **FACTOR** for numerous Southern firms. If your operation requires this specialized service, the Trust Company will welcome the opportunity to work with you and your bank in Dixie's "Forward March of Progress."



For more data, circle A-79 on Reader Service Card

Franklin Process

YARN DYEING SERVICE

Its Latest Contribution to Quality Processing

The photograph herewith shows one of our yarn carriers being delivered direct from a package dyeing machine to the very latest thing in yarn drying equipment—a high pressure, recirculating type dryer. This new method of drying leaves the yarn clean and in excellent condition for subsequent operations.

In addition to keeping up to date on materials handling methods, Franklin Process Yarn Dyeing Service also offers you these advantages: —

FRANKLIN SPRING. This spring permits harder packages to be compressed less and softer packages to be compressed more into a column of uniform density. Uniform penetration of the dye liquor and uniform shades result. The 1⅝" diameter tube lessens the differential between the inside diameter and the outside diameter of the package, so the dyestuff does not tend to concentrate on the inside. The liberal spaces between the wire spirals also permit a free flow of the dye liquor. White "cross overs" seldom occur.

Franklin Process COMPANY

A DIVISION OF INDIAN HEAD MILLS, INC.

Dyers of cotton (carded, combed, mercerized) • Orlon® (yarn and tow) • Acrilan • Dacron† Textralized® • Helanca • Spun Nylon • Spun Rayon • Blends Wool & Worsted Yarn – all yarns on Franklin compressible spring exclusively.

PHILADELPHIA • GREENVILLE
CHATTANOOGA • FINGERVILLE, S. C.
New York Office–111 West 40th Street
Providence Office–611 Turks Head Bldg.

*Trademark for Dupont's acrylic fibre.
†Trademark for Dupont's polyester fibre.

LARGE DYE BATCHES. If you need long runs of one shade, we can supply that shade in ONE DYE BATCH—up to 2000 lbs. in size. Thus you don't have to worry about mixed dye batches.

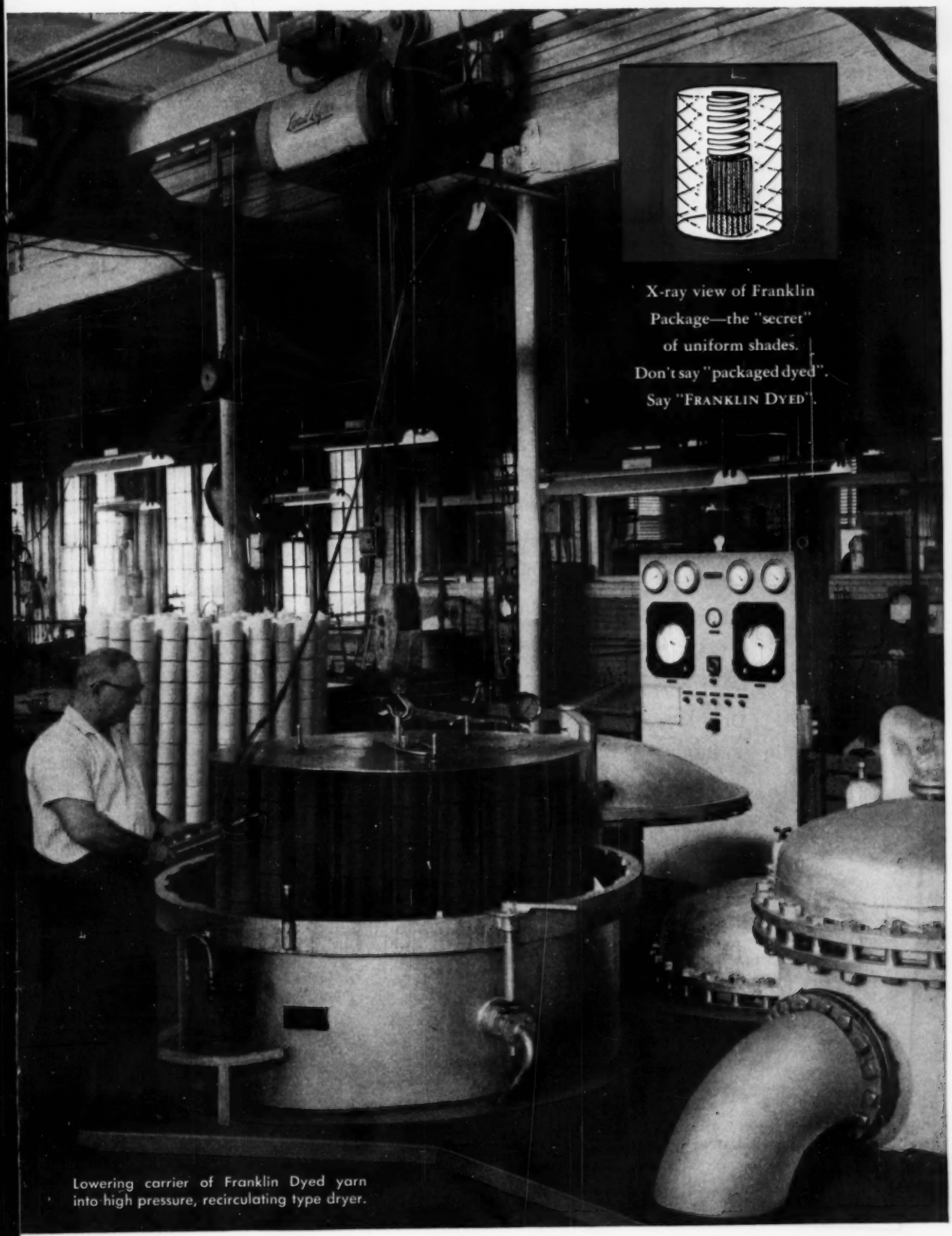
MULTIPLE DYEING MACHINE SIZES: — we have 14 different sizes of machines in our dye plants. Thus we can fit the machine to the poundage of yarn required. The proper ratio of dye liquor to yarn poundage is maintained. The chances of offshade work are minimized. Multiple batches of the same shade are unnecessary.

UNEQUALLED EXPERIENCE. Nothing takes the place of experience in yarn dyeing and we have an unequalled record in this respect. In our 48 years of experience we have dyed more than 700 million lbs. of yarn for practically every branch of the industry.

LABORATORY CONTROL. Our experimenting is done in the laboratory — not in the dye house. When the dye house receives your yarn, it also receives definite formula instructions. The necessity for re-processing is minimized and the quality of your yarn is safeguarded.

CONVENIENTLY YOURS. Four plants and two additional sales offices in major textile areas make Franklin Process Service "conveniently yours". Since it costs no more, why not use it?

For more data, circle A-80 on Reader Service Card



X-ray view of Franklin Package—the "secret" of uniform shades. Don't say "packaged dyed". Say "FRANKLIN DYED".

Lowering carrier of Franklin Dyed yarn into high pressure, recirculating type dryer.

For more data, circle A-81 on Reader Service Card →

News about LUREX®

A type for every kind of woven cotton

There is a prescribed type of Lurex for every cotton fabric woven—whatever the construction, method of weaving, or dyeing and finishing techniques employed.

- Lurex MF (polyester-foil type)
- Lurex MFCR (special modification of polyester-foil type)
- Lurex MMCR (special modification of metallized polyester type)

Only Lurex gives you this full range of metallic yarns to insure exactly the performance desired in every possible kind of woven cotton job.

See chart opposite and ask your nearest Lurex salesman for further details about the Lurex yarns best suited to *your* requirements.

Lurex, non-tarnishing metallic yarn made only by the Textile Fibers Department

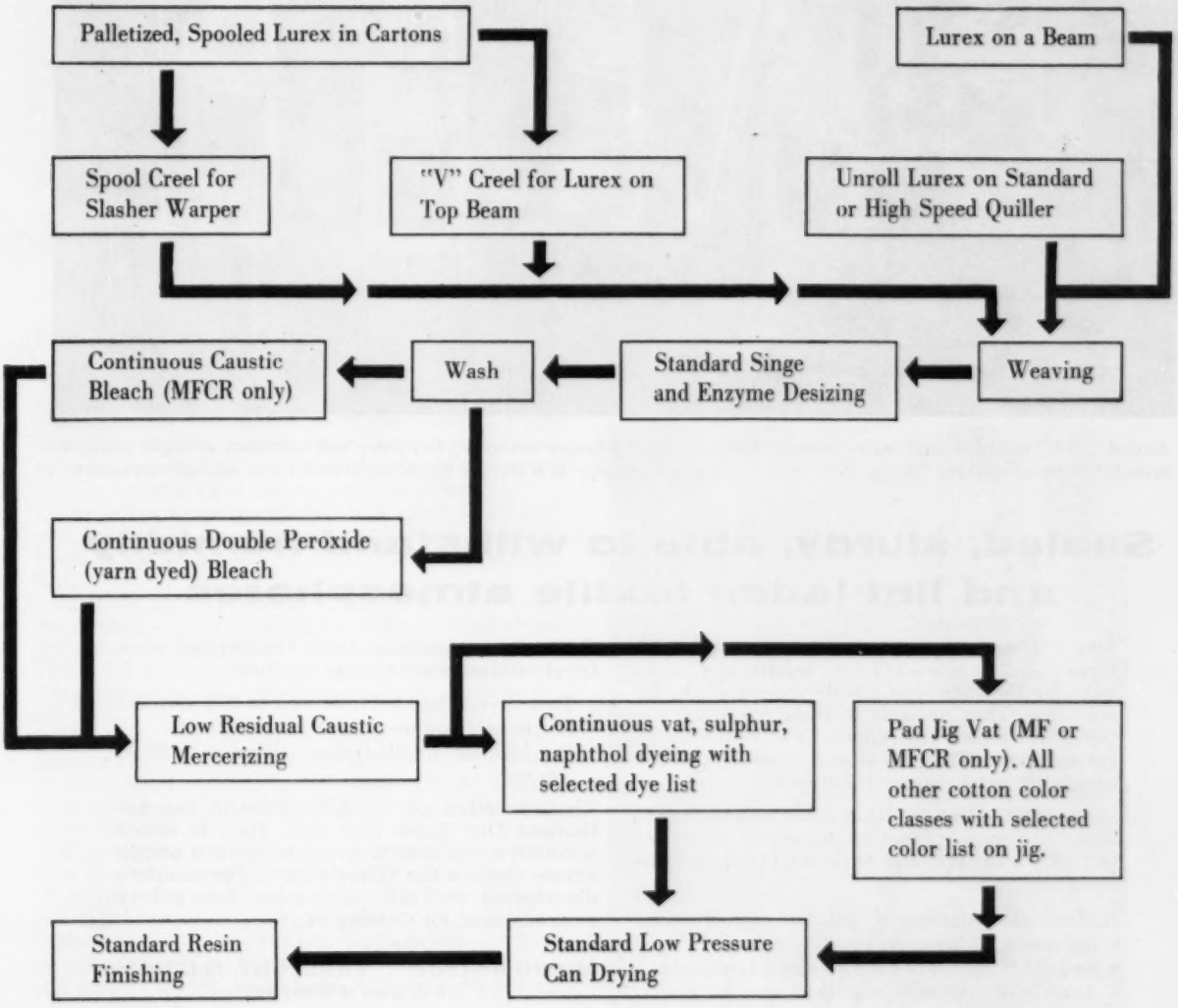
DOW

The Dow Chemical Company • ***Williamsburg, Virginia*** • ***New York: 350 Fifth Avenue***

Boston • Camden, N. J. • Charlotte, N. C. • San Francisco

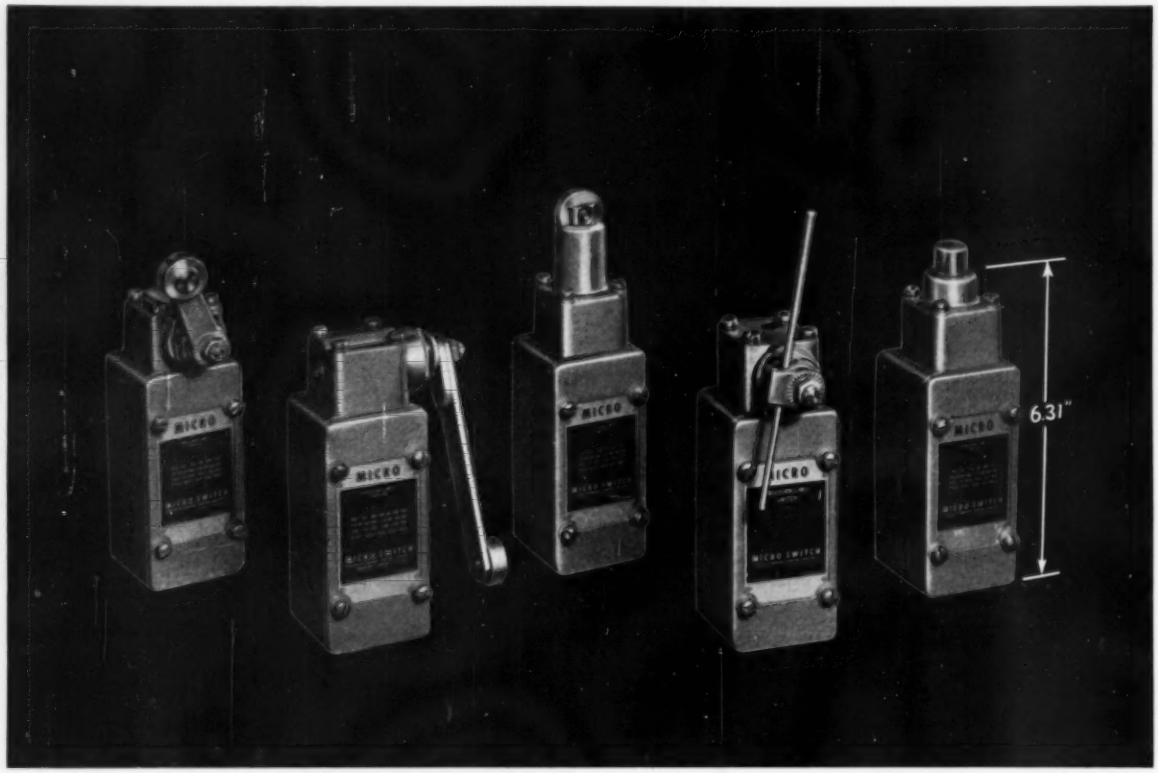
Manufacturing Affiliates in Canada: William B. Stewart & Sons, Ltd., Toronto and Montreal

Typical flow chart for cotton mills using LUREX MMCR LUREX MF LUREX MFCR


Palletized, Spooled Lurex in Cartons
Lurex on a Beam
Spool Creel for Slasher Warper
"V" Creel for Lurex on Top Beam
Unroll Lurex on Standard or High Speed Quiller
Weaving
Standard Singe and Enzyme Desizing
Wash
Continuous Caustic Bleach (MFCR only)
Continuous Double Peroxide (yarn dyed) Bleach
Low Residual Caustic Mercerizing
Continuous vat, sulphur, naphthol dyeing with selected dye list
Pad Jig Vat (MF or MFCR only). All other cotton color classes with selected color list on jig.
Standard Low Pressure Can Drying
Standard Resin Finishing

H HONEYWELL

MICRO SWITCH Precision Switches



Sealed "ML" switches with roller lever actuators, roller plunger actuator, low-force rod actuator, straight plunger actuator. Operating force ranges from 5 oz. for the rod actuator to 6 lbs. for the straight and roller plunger actuators.

Sealed, sturdy, able to withstand humidity and lint laden textile atmospheres

Five different actuators make it easy to install these "ML" switches as limits, safeties and interlocks for the control of a wide variety of textile machines. They are able to stand up under extreme mechanical punishment in even the worst environments. They are ideal for making present equipment safer and more automatic.

Sealed "ML" limit switches meet NEMA standards for non-ventilated enclosures of type IV-1C1.12 watertight and type VI-1C1-1.15 submersible.

Additional advantages of "ML" switches include:

- Adequate wiring space
- Switching elements have #8 screw terminals
- Additional actuators available
- Sealed covers secured with captive screws

Contact arrangements (and abbreviated electrical ratings to show range) include:

Two-circuit double-break—up to 600 vac.
Single-pole double-throw—up to 600 vac.
Double-pole double-throw—10 amps., 125 or 250 vac.

These switches are available through the Authorized Distributor near you. Help in switch selection is available from MICRO SWITCH branch offices. Consult the Yellow Pages. For complete description of "ML" and other heavy-duty switches, send for Catalog 84.

MICRO SWITCH . . . FREEPORT, ILLINOIS
A division of Honeywell

In Canada: Honeywell Controls Limited, Toronto 17, Ontario

H HONEYWELL **Honeywell**

MICRO SWITCH Precision Switches

Automatic Doffing Machine

An automatic doffing machine that reduces spinning-frame downtime to about 15% of that required for conventional hand doffing has been developed by Deering Milliken Research Corp., Spartanburg, S. C.

The machine lifts full bobbins from an entire frame in one motion, shifts slightly to one side, and drops empties on the spindles as shown in Photo A. The spinning frame is shut down less than 1 min., and the complete changing cycle takes less than 5 mins.

One machine can doff 12 frames per hour. Maximum number of frames that can be doffed by one machine is 12 times the number of hours in the doffing cycle. For example, on a 7-hr. cycle the machine can service 84 frames.

Other results that can be expected, according to officials, are:

1. The manual doffer can be replaced by a machine tender since the complete operation is push-button controlled.

2. Doffing labor costs are cut 30 to 50%, and indirect labor and fixed overhead costs are reduced substantially.

3. Fewer ends are broken, and yarn quality is improved. Production and spinning efficiency are increased.

4. A free tail of yarn is left that eliminates unwinding by the operator, and waste caused by handling with dirty hands is kept to a minimum.

Mechanically, the machine is relatively simple. Pneumatically controlled graspers, which fit most conventional bobbins, are attached to a bar that lowers the graspers over the spindles when they are ready for doffing.

The graspers grip the bobbins with uniform pressure near the base to prevent sloughing. Graspers shown in Photo A are deliberately set high to show the bobbin base.

After the full bobbins are removed and the empties are dropped on the spindles, the doffer is raised above the frame as in Photo B and routed to a loading station. There, full bobbins are placed on other automatic handling equipment, and empties are picked up automatically.

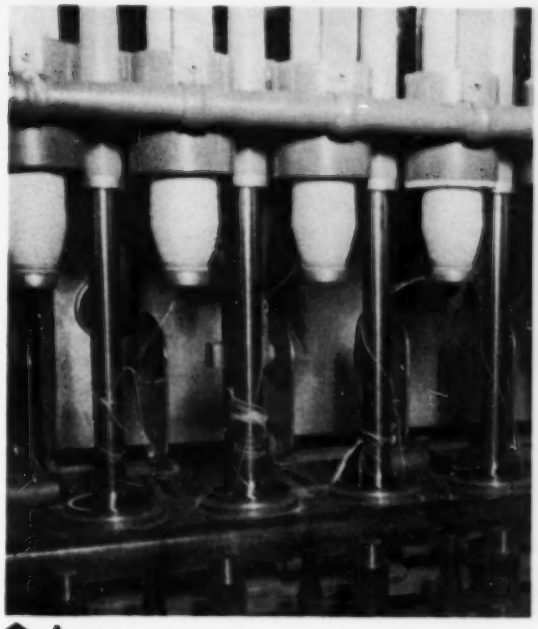
The loading station can be attached to the spinning frame or placed in any convenient location such as in the spooler room. The loader basically consists of two endless belts with pegs that deliver and receive the full and empty bobbins.

At present, empty bobbins are mechanically sorted by a separate air-operated machine that turns the bases all in one direction. This machine may later be made an integral part of the loading station.

Maintenance is low because the parts are not machined to precision tolerances and the graspers and rails are very flexible, which keeps the parts from getting out of adjustment.

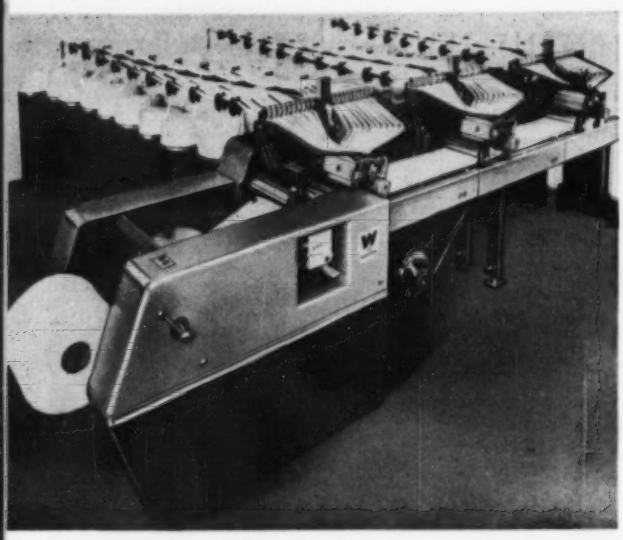
The doffer can move either lengthwise or crosswise from frame to frame on its own rail or on the overhead-cleaner rail. The cleaner reverses itself in event of a conflict for the same rail space. The doffer is operated by a 1-hp. motor and air compressor.

Circle T-1 on Reader-Service Card



A

B



Lap-Preparation Machine

A Super Lap preparation machine to be used in conjunction with the Even-Draft drawing frame has been announced by Whitin Machine Works, Whitinsville, Mass. The system permits up to 3% noil reduction in combing and increases comber production by straightening and paralleling the fibers before they enter the comber.

The lap-preparation system requires two machines to give two draftings in opposite directions, which produces up to four times the total draft of conventional methods. Four times as many doublings are made, and production is increased 100%.

Sixty drawing slivers are fed from a can creel, 20 ends to each of three heads, and combined into 11¾-in. sheets that are rolled into large laps weighing up to 1,000 grains per yard. The laps are optimum weight for comber efficiency and permit 20 to 25% increase in production.

Lapper specifications:
- Two-over-three drafting
- Large rolls mounted in antifriction bearings
- Weighting on each line—250 lbs.
- Weight supplied by precalibrated springs
- Production—500 lbs. per hr.

Circle T-2 on Reader-Service Card

Roving Frame

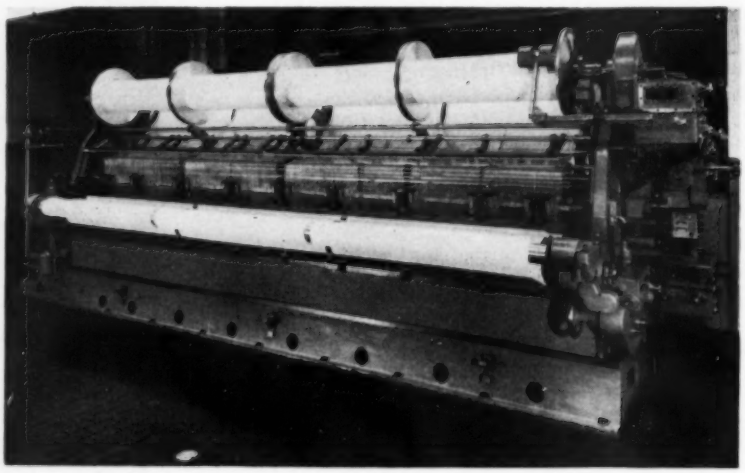
An improved 14x6½-in. Hi-Pro roving frame has been announced by Whitin Machine Works, Whitinsville, Mass. The frame runs at standard speeds and produces 85- to 90-oz. bobbins.

Features include Unitrol top-arm weighting, quick skip gears, new clearers, chain drive to twist gears, helical head-end gearing, helical bonnet and spindle drive, and antifriction bearings.

Change-overs are available for 12x6½-in. long-draft frames.

Circle T-3 on Reader-Service Card

High-Speed Tricot Machine



A high-speed, 168-in., three-bar tricot machine that combines the features of its two-bar machine with other new features has been introduced by Textile Machine Works, Reading, Pa. Designed to operate at double the speeds of older machines in the 310- to 400-course-per-minute range, the machine will knit a wide range of patterns.

Among the features of the unit are: (1) interrupted let-off control for front and middle beams, (2) warps up to 32 ins. in diameter for bottom and middle beams and 21 ins. for the third beam, (3) 48-course pattern drums independently mounted and designed for use with varied-length pattern chains, (4) simplified guide-bar removal, and (5) chain drive at all points where accurate timing is essential.

Let-off units, rack counter, and fabric take-off gear change box are conveniently located at the right end of the machine. A 10-hp. standard motor coupled with a highly efficient variable-speed drive enables the machine to be operated around the clock with a minimum of attention.

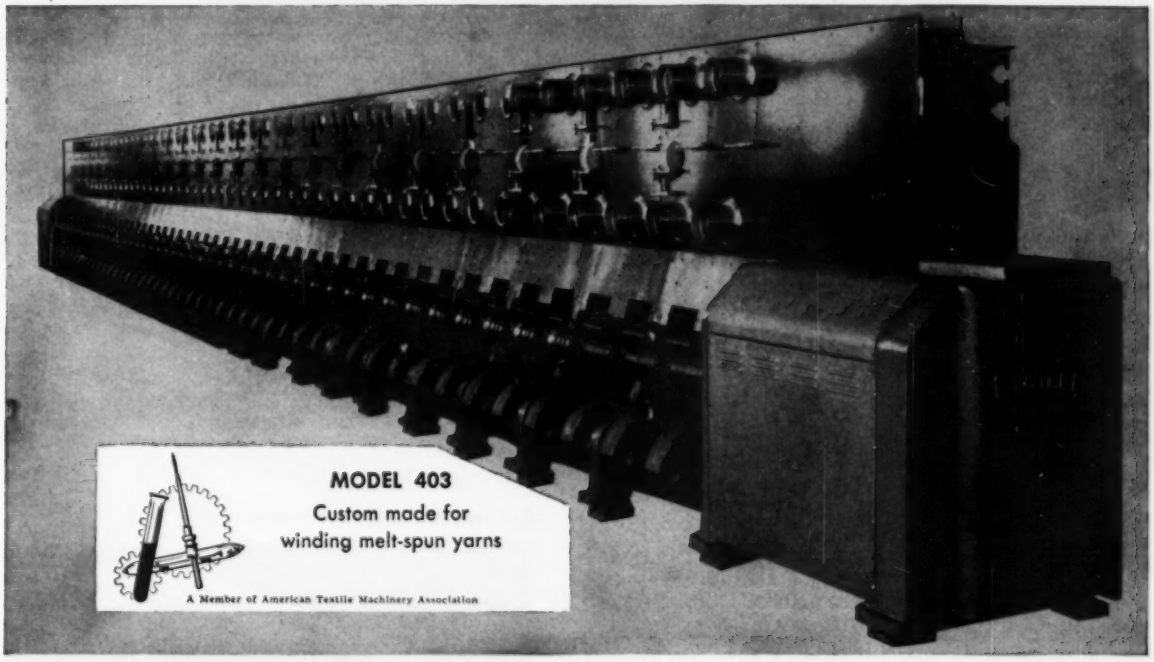
Pressure lubrication of all main bearings is provided by a ½-hp. circulating pump supplying a continuous flow of oil from the main reservoir. Full-flow filter and sump screen insure delivery of clean lubricant to bearings at all times. The machine is now on display in Reading.

Circle T-4 on Reader-Service Card

FOSTER CUSTOM MADE EQUIPMENT

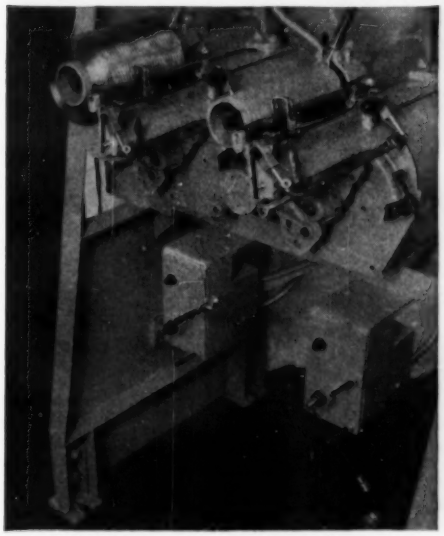
For Takeup Winding of Man-Made Fibres

613-B

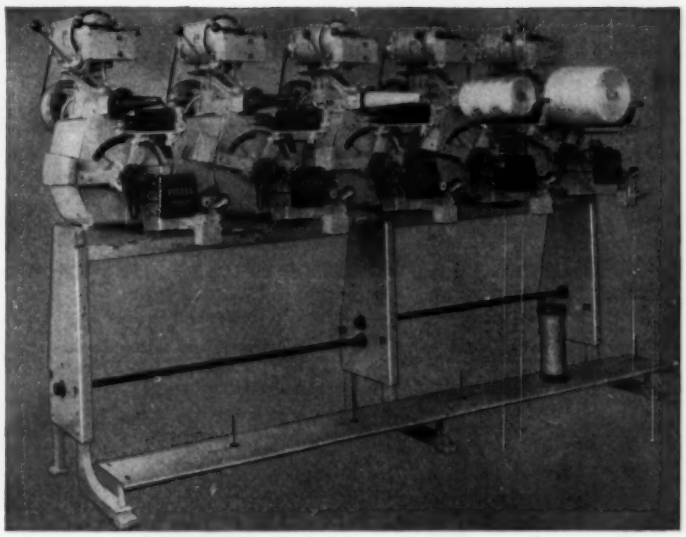


MODEL 403
Custom made for
winding melt-spun yarns

A Member of American Textile Machinery Association



TENSIOMATIC — Adaptation for winding wetspun or dry-spun yarns.



MODEL 78 — Standard for winding wet-spun or dry-spun yarns.

We have had years of experience in designing and manufacturing custom made equipment for the takeup winding of man-made fibres — melt spun, wet-spun and dry-spun. Our customers in this field include some of the biggest producers, both in this country and abroad.

Whether you require a machine that is custom made throughout, or an adaptation of one of our standard models, we will be glad to work with your engineers in the strictest confidence.

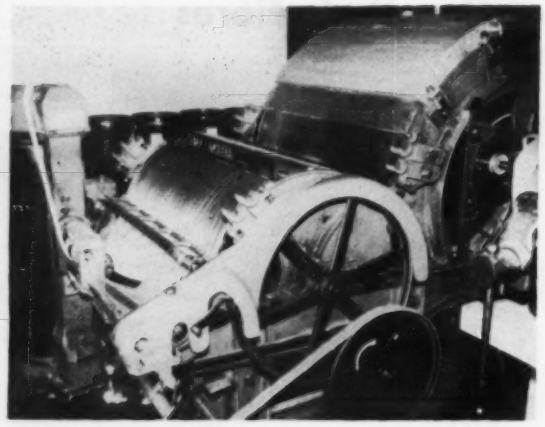
FOSTER MACHINE COMPANY

A Yarn Winder for Every Purpose

Westfield, Massachusetts, U.S.A.

Southern Office — Johnston Bldg., Charlotte, N. C. *Canadian Representative* — Ross Whitehead & Company Ltd., 2015 Mountain St., Montreal, Que. and 100 Dixie Plaza, Port Credit, Ont. *European Representative* — Muschamp Textile Machinery (Sales) Limited, Elder Works, Wellington Road, Ashton under Lyne, Lancashire, England.

For more data, circle A-83 on Reader Service Card



Circle T-5 on Reader-Service Card

Flatless Card

A pilot model of the SRRL granular (flatless) card that cuts waste in half was shown to potential manufacturers and users last month at the Southern Regional Research Laboratory, 2100 Robert E. Lee Blvd., New Orleans, La.

In place of flats, the card has an attachment with a granular surface that comes in contact with the cotton. The apparatus, which weighs about 200 lbs., has no moving parts and only one area is subject to wear. Dust is sealed inside the card.

Laboratory tests made on six types of cotton with staple lengths ranging from $\frac{31}{32}$ to $1\frac{7}{16}$ ins. showed 2.63% waste removed, compared with 5.81% for the same cotton carded on a conventional card with flats. Quality was the same. Limited mill tests indicated that neps are slightly reduced.

The granular card was developed as result of a two-year study of air currents in carding [TEXTILE WORLD, May '58, p. 88].

Cationic-Starch Warp Size

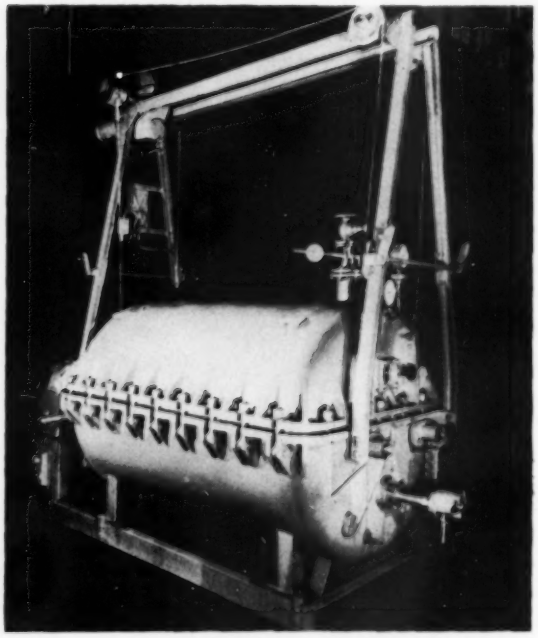
A cationic starch suitable for warp sizing for man-made fibers is said to eliminate the need for resin binders. The material is marketed as CATO by National Starch Products, Inc., 750 Third Ave., New York 17, N. Y.

In addition to strong adhesion, the sizing material is slow in congealing and therefore can be handled easily. Clogged size lines, hard size, and size marks are eliminated.

The size is readily removed from fabrics by usual desizing and scouring processes. It is available in a variety of fluidities for all warp-requirement viscosity and pickup.

Circle T-6 on Reader-Service Card

Automatic Dyeing Machine



A fully enclosed jig-type dyeing machine that can be operated under pressure has been introduced by Benninger Engineering Co. Ltd., Uzwil, Switzerland.

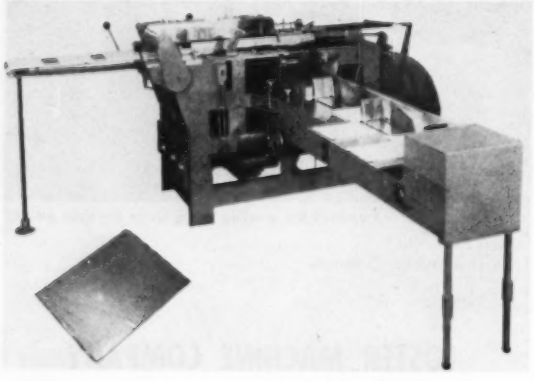
A feature of the machine is the sampling device, which permits sampling directly from the lot being dyed without loss of pressure. The same spot can be sampled repeatedly; so the dyer has complete control of the shade at all times.

Dye liquor is heated indirectly, and direct heat is also available to build up pressure and temperature quickly.

Built-in expanders keep goods free of creases during processing, and the reversing motion is automatic.

Circle T-8 on Reader-Service Card

Wrapping Machine



A machine especially adapted to wrapping textile articles in polyethylene film has been marketed by Hayssen Mfg. Co., Sheboygan, Wis. The machine has a fully automatic lubricating system.

Circle T-7 on Reader-Service Card

Know your AIM*... Indian Head Mills, Inc. does...

Steel Strapping Machine closes textile boxes

Acme Idea Man J. B. Quarles cooperated with Indian Head Mills, Inc. on this modern installation.

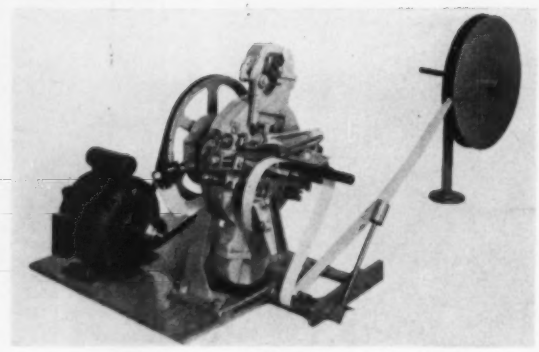
INDIAN HEAD MILLS, INC., Cheraw, South Carolina, uses an Acme Steel Model F1 Semi-Automatic Strapping Machine to close and reinforce boxes of their well-known, quality, "Indian Head" brand textiles. Now, only one man is required for the strapping operation . . . a saving of 8 to 12 man hours per day. (Idea No. S5-5)

Served by a conveyor system, the F1 applies as many steel straps as desired in a matter of seconds with uniform, pre-determined tension. Electrically powered, the machine is controlled by push-buttons. Strap is cut automatically, and ends are instantly and permanently joined by spot welds. The machine handles containers of various sizes in any sequence without adjustment. A special track feeds the strap to within easy operator reach.

***Know your Acme Idea Man.** He is sure to provide clues to better ways of protecting and shipping your products. Call him today at a nearby Acme Steel office. Or write Dept. TAS-59, Acme Steel Products Division, Acme Steel Company, Chicago 27, Illinois. In Canada, Acme Steel Company of Canada, Ltd., 743 Warden Ave., Toronto 13, Ontario.

ACME STEEL **STEEL STRAPPING**

For more data, circle A-84 on Reader Service Card



Machine To Cut Tape

A machine to measure and cut narrow fabrics such as spinning tapes, auto safety belts, and knit goods has been announced by Artos Engineering Co., 2757 S. 28th St., Milwaukee, Wis. The machine measures and cuts 7,200 tapes per hour in lengths of 2 to 10 ins.; and by feeding two rolls of tape simultaneously, this production rate is doubled.

Cuts up to 160 ins. are possible neatly and quickly. The machine runs at a constant speed and cuts without stops or jerks.

For light materials, a bench model is provided (shown in the photograph). A heavier machine cuts both light and heavy materials.

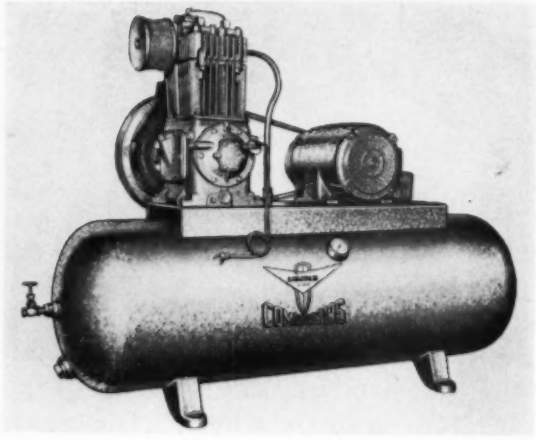
Circle T-9 on Reader-Service Card

Air Compressors

A complete line of air compressors has been introduced by Lincoln Engineering Co., 4010 Goodfellow, St. Louis 20, Mo. The reciprocating compressors are available in over 200 models with motor or engine capacities of ¼ to 20 hp., air displacement up to 92 cu. ft. per min., and tank capacities up to 200 gals.

Both horizontal- and vertical-mounted tanks are equipped for automatic start-and-stop operation; horizontal models offer continuous-service operation. All models are loadless starting because the motor attains full speed before compression starts.

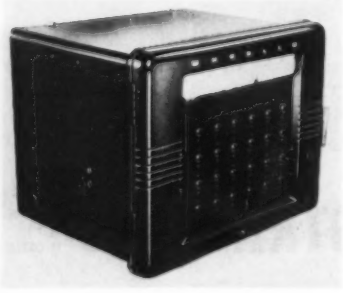
Other construction features are lightweight balanced four-ring automotive-type pistons, drop-forged balanced crankshaft of high-carbon steel, Lynite connecting rods, oversize main roller bearings, rotary or piston oil pump for constant lubrication, and high-gloss hammered-copper enamel finish.



Circle T-10 on Reader-Service Card

Temperature Indicator

For checking temperatures rapidly at many points, Wheelco Instruments Div., Barber-Colman Co., Rockford, Ill., has announced its 9000-Series multiswitch indicator. The instrument can be used for as many as 108 stations, and additional stations can be added with an additional switch-housing cabinet.



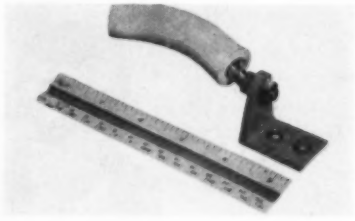
The basic instrument is a completely self-contained mill-balance unit and requires only the external sensing devices. The selector switches are three-position spring-return type.

The Wheelco 9000 indicator uses an 11-in. scale of either single or dual range. Balance speeds are fast, with a choice of 2, 4, or 15 secs. Reference-junction compensation is automatic.

The standard reference system is a constant-voltage source with optional standard cell and battery. Sensitivity is five microvolts for scale spans of five millivolts.

Circle T-11 on Reader-Service Card

Small Expander

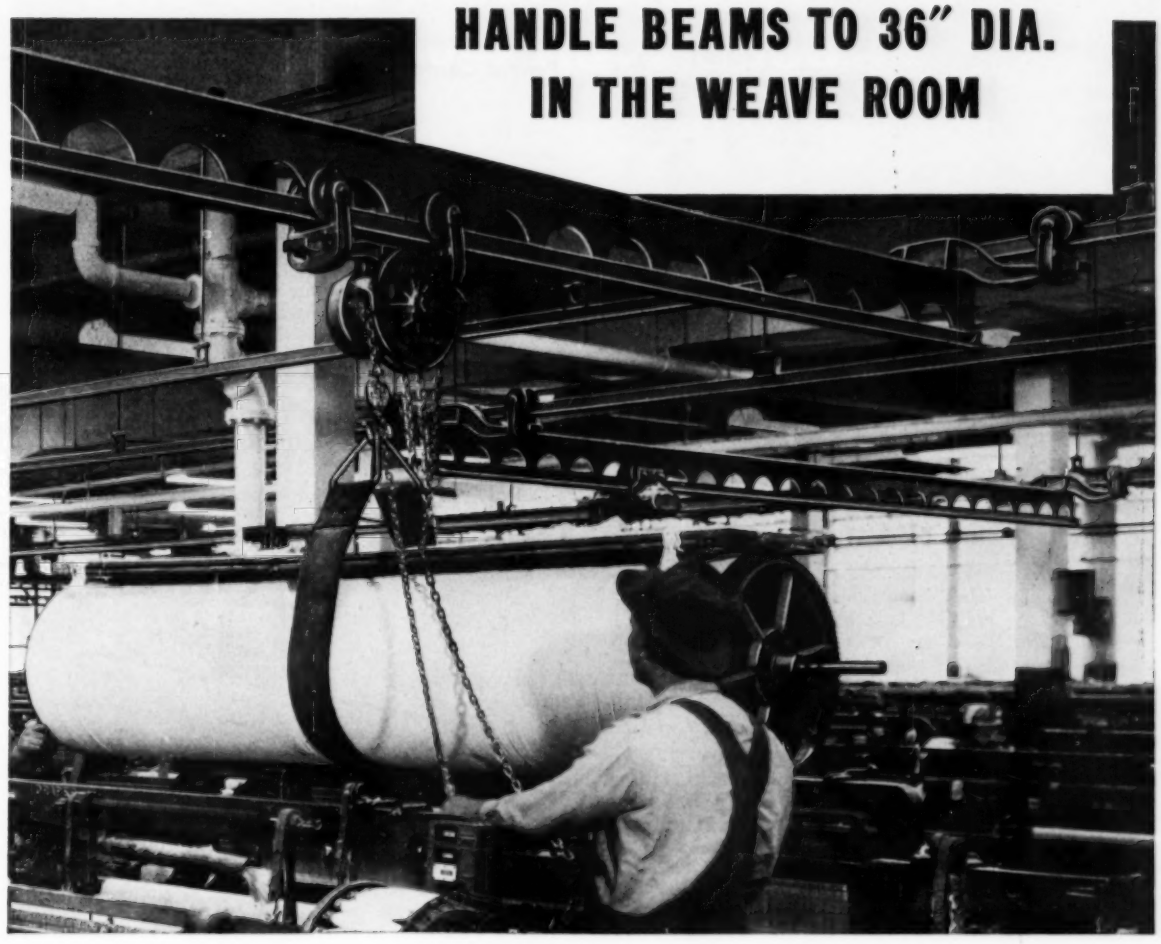


A rotating, bow-shaped expander designed to remove wrinkles and creases from tapes, ribbons, and other narrow fabrics has been marketed by Mount Hope Machinery Co., Taunton, Mass. The unit is 3 ins. long and the roll is ⅞ in. in diameter. Larger or smaller units are also available.

Circle T-12 on Reader-Service Card

The Fast, Safe, Efficient Way to

HANDLE BEAMS TO 36″ DIA. IN THE WEAVE ROOM



BECAUSE costs can be reduced greatly by working with larger beams, textile mills have been increasing beam diameters more and more. Today some mills are using beams of 36″ diameter. This, of course, increases their weights. Some beams with harness weigh up to 2000 lbs., which is far more than can be handled manually with floor dollies. Beams of 24″ to 36″ diameter are also larger than can be accommodated by shaft alleys in most weave rooms.

The only natural and obvious solutions to the handling of such large beams in the weave room is the use of simple, inexpensive Cleveland Tramrail equipment. Thereby, heavy beams can be easily moved overhead to any loom by *one* man. Aisle widths need not be changed. The same handling equipment that places a beam in a loom removes and transports the cloth at opposite side.

Safety is improved tremendously when Cleveland Tramrail is provided. Damage to beams is greatly reduced. Floor destruction is minimized.

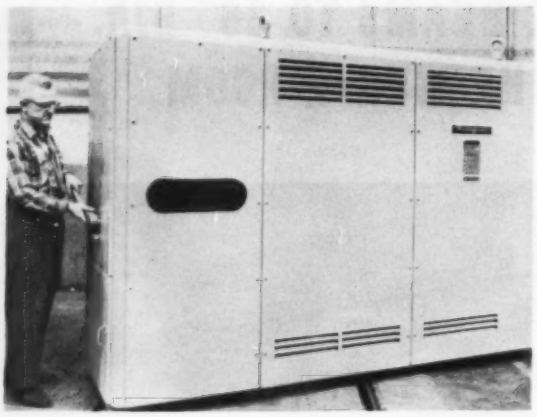
Tramrail equipment expedites other jobs in weave rooms. Entire looms can be lifted above other machines and quickly moved to the maintenance shop with minimum effort and disturbance. Ceilings and lights are easily reached from platform on crane for cleaning.

Write for free Engineering and Application Booklet No. 2008. Packed with valuable information.

CLEVELAND TRAMRAIL

Overhead Materials Handling Equipment

CLEVELAND TRAMRAIL DIVISION • THE CLEVELAND CRANE & ENGINEERING CO. • 8453 E. 287 ST. • WICKLIFFE, OHIO



Power Centers

Dry-type power centers that feature lower sound levels and Type RM lighting arresters are available from Westinghouse Electric Corp., P. O. Box 2099, Pittsburgh 30, Pa.

Sealed dry-type ASL power centers rated at 750 kva. and above have external fans to circulate air over the surface of the case. The rating with fans in operation is 125% of the self-cooled rating.

These power centers are primarily used to reduce voltage for lighting and machines. The power center in the photograph is rated at 300 kva. and 6,900 v.

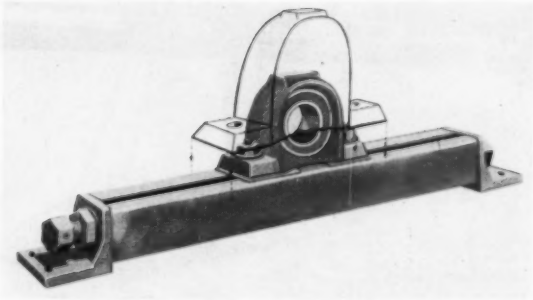
Circle T-13 on Reader-Service Card

Frame for Pillow Block

A take-up frame, Versa Mount, to be used with any type of pillow block is available from Lovejoy Flexible Coupling Co., 4949 W. Lake St., Dept. TWN, Chicago 44, Ill. The frame can be top- or side-mounted by loosening a lock nut that permits swinging the flange connection in either way.

A large nut is at both ends of an adjusting screw, and each nut has a heavy steel-rod pin to permit easy disassembly without special tools.

The adjusting screw is enclosed for protection from dirt and contamination. A quickly removed face plate gives easy access for lubrication or cleaning. The frame can be installed on old or new equipment.



Circle T-14 on Reader-Service Card

Compressed-Air Blow Gun

A blow gun for compressed air with balanced piston action is being sold by Breco Div., Perfecting Service Co., 332 Atlando Ave., Charlotte 6, N. C. Natural finger pressure and easy trigger action on the pistol-design grip release the exact amount of air required.

The flow of air is easily directed up, straight ahead, or down with a slight movement of the wrist. The cam-acting mechanism has a tapered Teflon seal, stainless-steel spring, and aluminum seat. A hook for hanging is also a trigger guard.

The gun is made of aluminum. Two 10-in. extension nozzles, one straight and one curved, are for hard-to-reach places.

The outlet for a hose connection is ¼ in. in diameter.

Circle T-15 on Reader-Service Card

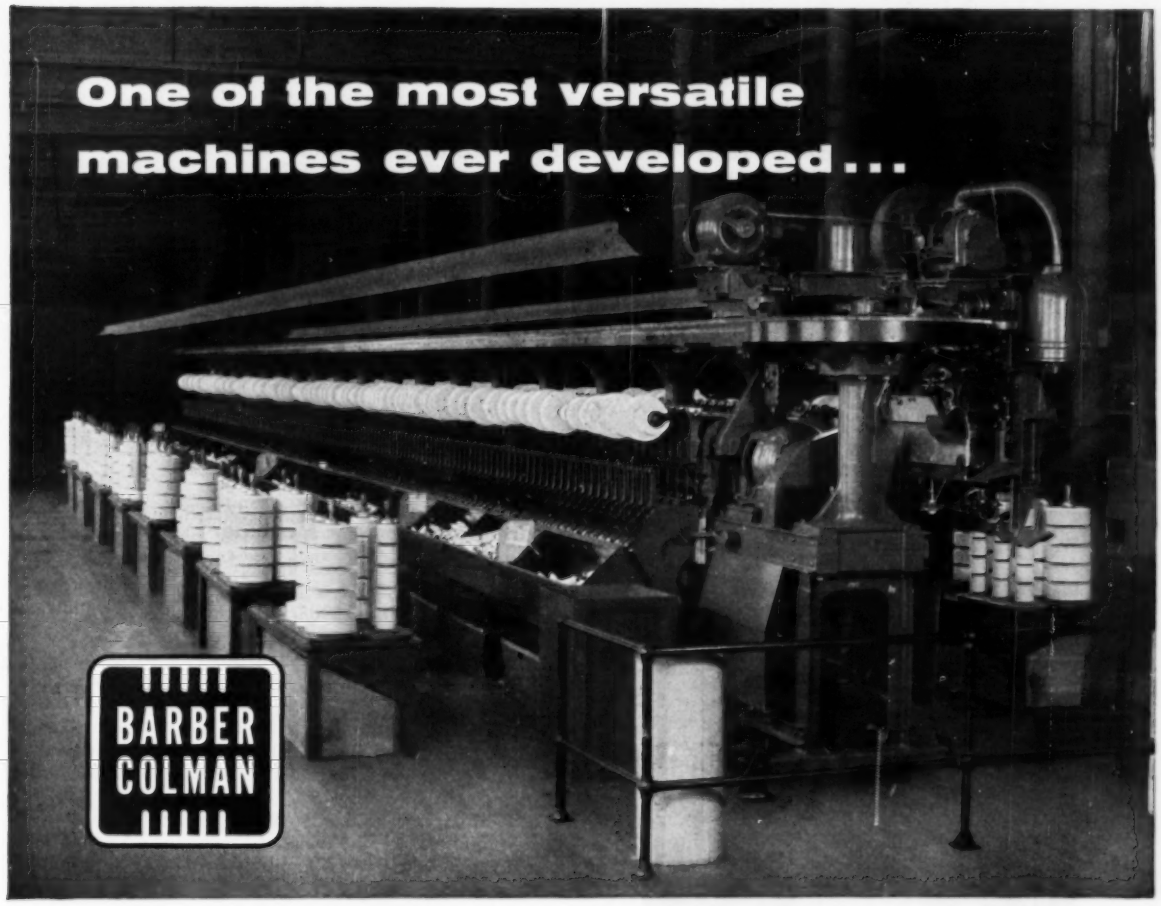
Vibrascope for Denier

The Manra vibrascope developed by the British Rayon Research Assn. and made by Louis Newmark Ltd., Croydon, England, gives 100 denier tests per hour. The denier range is 0.5 to 450.

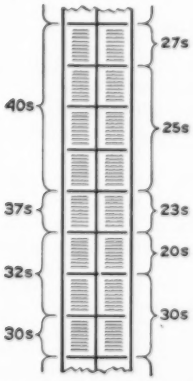
The fiber movement is detected electronically and amplified. The amplified signal is fed to the moving coil vibrator so that an oscillatory loop is formed to include the test sample.

The system resonates at a frequency determined by the denier of the sample if the wave length and tension are fixed. The resonant frequency is measured electronically and indicated on a meter. The machine is for production testing and research applications.

Circle T-16 on Reader-Service Card



MULTIPLE-COUNT SPOOLER



Sale yarn mills and producers of piece goods that use various counts of different mixtures will find that this machine can be a very profitable investment. It is the famous and familiar Barber-Colman Automatic Spooler, but now you can wind . . .

A DIFFERENT COUNT EVERY 9 UNITS

The machine is built in "bays" between posts that support the traveler track, with nine bobbin-to-cheese winding units in each side of each bay. Empty bobbins, instead of being conveyed to a single sorting table, drop into separate boxes under each bay, thus enabling each group of nine units to be loaded and run with a different yarn. Starter boxes and cheese tables are set up individually for each bay. The only limitation is that the extremes of different counts on the machine at any one time must fall within the range of the knotter in the traveler. Changes can, of course, be readily made at any time, and any number of bays can be run on identical yarns. (Note the dividers between the bobbin trays on the machine shown above.) *Full details on the many adaptations of this versatile machine can be obtained from your Barber-Colman representative.*

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • WARP DRAWING MACHINES

BARBER-COLMAN COMPANY

ROCKFORD • ILLINOIS • U. S. A.

FRAMINGHAM, MASS., U. S. A. GREENVILLE, S. C., U.S.A. MANCHESTER, ENGLAND MUNICH, GERMANY

INDIA	MEXICO	BRAZIL	JAPAN	PAKISTAN	PAKISTAN
Batliboi & Company Forbes Street, Fort Bombay, India	J. Rabata Isabel la Catolica 45-913 Apartado 7348 Mexico D.F., Mexico	Industria e Comercio de Maquinas S. A. Avenida Rio Branco No. 50, Rooms 1201/3 P. O. Box No. 63 Rio de Janeiro, Brazil	Do-Yei Shoji Kabushiki Kaisha Atlas Building (7th Floor) 11, Bingo-machi, 3-chome, Higashi-ku, Osaka, Japan	Associated Agencies (M'cr.) Ltd. Piccadilly House 11 Piccadilly Manchester 1, England	Associated Agencies (M'cr.) Ltd. 27 Kothari Building Napier Road Karachi 2, Pakistan

For more data, circle A-86 on Reader Service Card

Electrical Plastic Sheets

A laminated plastic for electrical applications in humid conditions is being offered by Continental-Diamond Fibre Corp., Newark 107, Del. Made from cellulose paper impregnated with epoxy resin, the material is flame retardant.

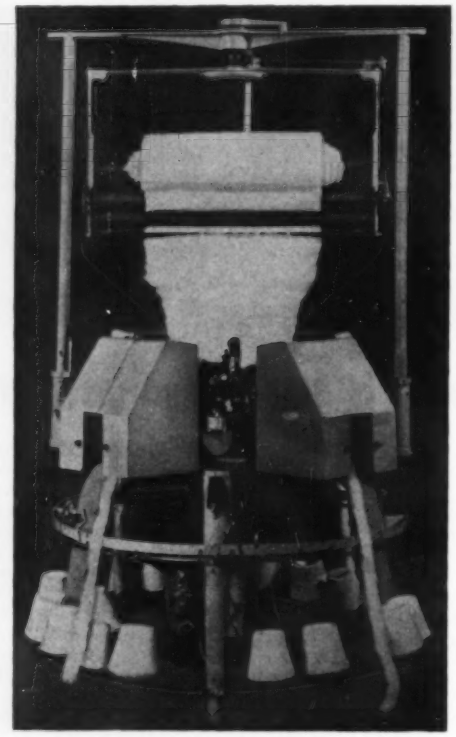
It resists humidity and absorbs only 0.35% water after 24-hr. immersion. The material is supplied in thicknesses of 0.015 through 0.25 in. in sheet sizes of 38x42 ins. and 38x38 ins. It is available in plain sheets and copper-clad sheets. One finish is natural cream color in semigloss.

Circle T-17 on Reader-Service Card

CONTINUED ON PAGE 174

TO BE SHOWN AT KNITTING ARTS EXHIBITION

High-Pile Knitting Machine



High-pile fabric will be knitted on a Tompkins S-1 Junior circular spring-needle knitting machine shown by Tompkins Bros. Co., Inc., 623 Oneida St., Syracuse 4, N. Y.

The machine has four high-pile cards and four feeds for high-pile-fabric work. Each of the cards has a stop-motion control, and there are triple stop motions on every thread in the knitting mechanism.

The machine features a gearless drive and vacuum air-cleaner system. It never has to be dismantled for cleaning because all parts are easily accessible. The machine offers cylinder interchangeability from 12- to 28-in. sizes.

Circle T-18 on Reader-Service Card

Automatic Hosiery Machine

An automatic true-rib hosiery machine, A-T-R, for children's and infants' wear will be exhibited by Fidelity Machine Co., Inc., 3908-18 Frankford Ave., Philadelphia 24, Pa.

It is equipped with a Thy-Mo-Trol drive made by General Electric Co. All sizes of hosiery from 2¾-in. plain to 2x2 rib are made on the machine.

Features are: automatic clipping for selvage, undersole looping for added comfort, true-rib top made with dial-latch needles, and 10 colors made with only five drum tricks.

The machine knits stretch yarn, and color possibilities are unlimited because it has the company's 10-color yarn selector and knot tyer. Transfer is completely automatic. Rubber lay-in and picot are optional.

Circle T-19 on Reader-Service Card

Rotary Dyeing Machine

A completely redesigned stainless-steel 100-lb. rotary dyeing machine will be shown by Venango Engineering Co., 8311 Torresdale Ave., Philadelphia 36, Pa. All internal gears and bearings have been eliminated in the machine.

The cylinder rotates on heavy-duty ball bearings mounted outside the tank. Steam connections are made at the end of the tank instead of at the bottom. The reversing mechanism is electric and adjustable to produce cycles of 0 to 30 mins.

Circle T-20 on Reader-Service Card

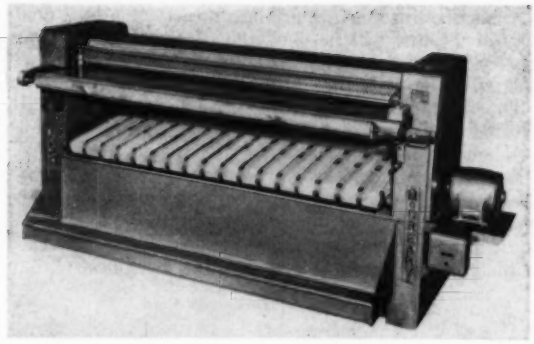
Inspecting Instrument

A testing instrument that can be used as a microscope, comparator, and projector will be shown by Hudson Automatic Machine & Tool Co., 137 38th St., Union City, N. J. Magnification is from 7X to 2,000X.

The instrument has built-in illumination for transmitted and angular surface light, a yarn-comparison attachment, plain or scaled prismatic ground-glass screen, and an attachment for film-pack or Polaroid cameras.

Circle T-21 on Reader-Service Card

Brushing Machine

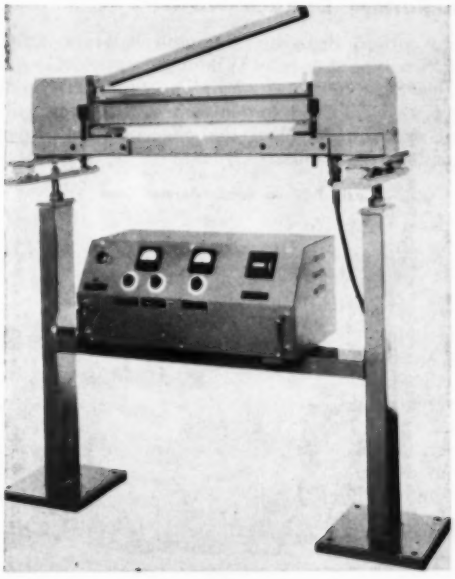


McCreary Machine Works, Inc., Cohoes, N. Y., will show its Model 61-S Single-Roll Brushing Machine.

The unit is designed to brush fabrics made from all man-made or natural fibers. Models are available in 36-, 60-, and 72-in. widths.

Circle T-22 on Reader-Service Card

Warp-Yarn Monitor



A tricot warp-yarn monitor that detects defects of a predetermined size and stops the warper automatically before the defect reaches the beam will be shown by Fabrionics Corp., Huntington, L. I., N. Y. The machine also can be used to inspect weaving yarns made from natural and man-made fibers.

Advantages: warper speed can be increased from 100 to 350 yds. per min.; warper work assignment can be increased 200 to 300%; averages of 900 racks without defects can be maintained.

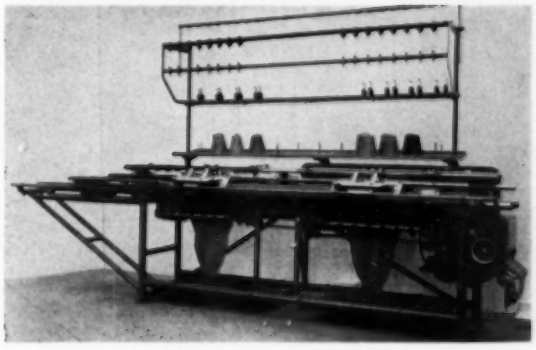
Circle T-23 on Reader-Service Card

Tester for Knit Goods

Special attachments for knit-goods evaluation will be featured by Scott Testers, Inc., 95 Blackstone St., Providence 5, R. I. A clamp, A-7, permits evaluation of stretch in either direction while a ball-burst fixture provides evaluation through biaxial elongation. The machine evaluates knitted fabrics for hysteresis and recovery in addition to elongation and ultimate tensile strength.

Circle T-24 on Reader-Service Card

Two-Head Knitting Machine



A flat-knitting machine, Type DRBA, with two coupled double-lock carriages each working over a 12-cut needle-bed section of 36 ins. will be shown by Dubied Machinery Co., 21-31 46th Ave., Long Island City 1, N. Y.

The machine has high- and low-butt needles, selection of either low- or high-butt needles, and stitch transfer of either from front to rear or vice versa.

Automatic double-system cam boxes are combined for knitting and stitch transfer. Selective-raising cams make fabrics in rib, tubular, cardigan, eight lock, and transfer.

Circle T-25 on Reader-Service Card

Sewing-Machine Attachments

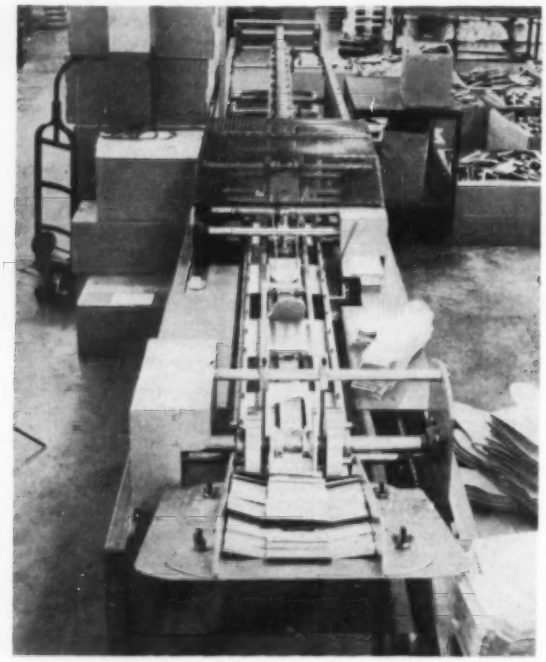
A series of attachments for sewing machines will be shown by Clinton Industries, Inc., 156 Hudson St., Hackensack, N. J. Included are the Cyclo-matic attachment that positions the needle either in or out of the work, and the Trim-O-Matic that positions the needle in or out of the work and trims both top-and bottom-bobbin threads.

Other devices include the Trim-O-Way, which does not position the needle but trims threads at the end of seams; the Chain Cutter, a Flip Stacker, and an automatic foot lifter.

A record timer will be shown that provides a detailed, accurate, permanent record of machine operations. The record can be used as a basis for timestudies or for direct rating of piecework scales.

Circle T-26 on Reader-Service Card

Printed Packaging



Lassiter Corp., 5702 Empire State Bldg., New York, N. Y., will have a complete display of printed consumer packaging that is designed and produced for knitgoods. A machine-packed folder for half-hose, women's hosiery, and other soft goods will be shown.

Circle T-27 on Reader-Service Card

Seamless-Hosiery Machine

A machine for knitting seamless hosiery at 4 to 7 doz. pairs in 24 hrs. will be shown by John Klein & Co., Inc., 385 Fifth Ave., New York 16, N. Y., and Santoni & Co., Brescia, Italy.

The machine has 400 to 474 needles, automatically adjusted two-speed motor, and a pneumatic device for withdrawing stockings.

Pyramid reinforcement provides square or shaped reinforcements or splicings. An instant-action stop motion operates at needle or thread breaks and also signals the stop with an electric lamp or bell of 24 v. These devices enable one operator to run 30 or more machines.

Circle T-30 on Reader-Service Card

Humidifier

An atomizing humidifier and air filter to condition yarn in storage or production will be shown by Walton Laboratories, Inc., 1186 Grove St., Irvington, N. J. The yarn is said to absorb moisture faster than when it is conditioned with regular equipment.

Circle T-31 on Reader-Service Card

Fibre Pattern Disks

Fibre pattern disks for Hemphill half-hose knitting machines will be shown by Wildman Jacquard Co., 1210 Stanridge St., Norristown, Pa. The fibre pattern disks will replace steel disks formerly used, and they will be sold at approximately half the price of the company's steel pattern disks.

Circle T-32 on Reader-Service Card

Flat-Knitting Machine

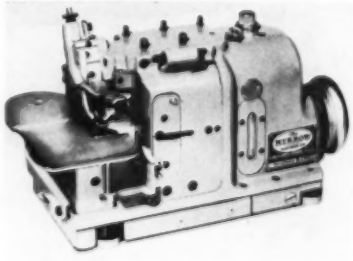
A fully automatic flat-knitting machine, MCI, 63 ins. wide in 6 to 14 gauge will be demonstrated by Steinberg Bros./Stonehill Knitting Machines Corp., 174 Scholes St., Brooklyn 6, N. Y.

Needle beds are mounted on a massive torsion-free foundation for faultless stitch formation. Beds are fitted with high- and low-butt needles. The front needle bed can be lowered, and the back bed can be racked.

Four limitable yarn carriers sliding on two strong low-position double-side bars can be controlled automatically on each row of pasteboard cards.

Circle T-28 on Reader-Service Card

Sewing Machines



Overstitching machines that overseam, overedge, hem, and shirr knitted material will be displayed on sewing tables by Merrow Machine Co., 28 Laurel St., Hartford, Conn. A hosiery toe-closing machine that replaces looping will also be demonstrated.

Circle T-33 on Reader-Service Card

Tensile-Strength Tester

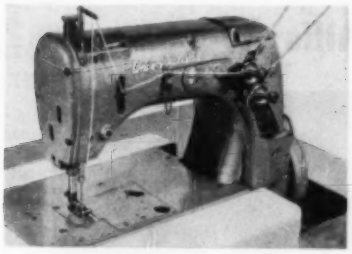
A tensile-strength tester, CRE, with a special extended 3-in.-thrust ball-burst attachment will be shown by Scott Testers, Inc., 95 Blackstone St., Providence 5, R. I.

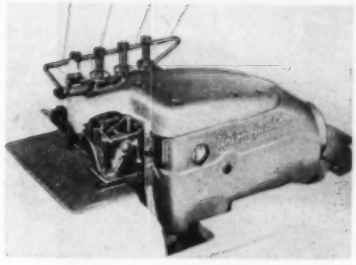
Used with other Scott holding fixtures, this tester evaluates fabrics, yarns, and constructions by precise electric weighing up to 1,000 lbs. tensile strength.

Operation is simplified with a single master control lever.

Circle T-29 on Reader-Service Card

Sewing Machines



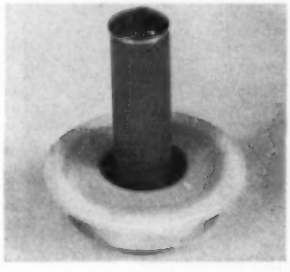


A new high-speed bobbinless zig-zag-stitch machine for lingerie will be shown by Union Special Machine Co., 400 N. Franklin St., Chicago 10, Ill. The units are designed primarily to attach decorative trim to undergarments (top photo).

Another new machine to be shown is a two-needle, four-thread machine that produces an edge-covering stitch with a parallel reinforcing needle thread (bottom photo).

Circle T-34 on Reader-Service Card

Improved Yarn Tension



A wear-resistant aluminum oxide-bottom disk for the Una-Mag yarn tension will be shown by Fabrionics Corp., Box 521, Huntington, N. Y.

The control permits yarn tension to be increased simultaneously from a central location for any number of ends.

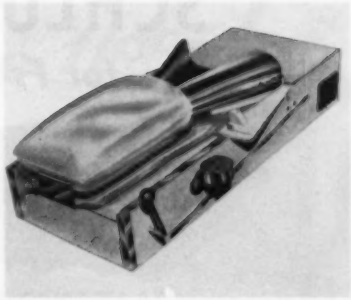
Circle T-35 on Reader-Service Card

Bag Packager

Small articles of clothing can be packaged quickly by means of a machine to be shown by Errich International Corp., 35 W. 36th St., New York 18, N. Y.

The Model 91-R, a 12-in. machine, will handle shirts, sweaters, and similar articles and works with many types of packaging films. The 91-R14 will handle larger garments.

Circle T-36 on Reader-Service Card



Yarn Tensions

Several new models of Electrotense yarn tensions with a range of 0 to 100 grams will be shown by Lindly & Co., Inc., 248 Herricks Rd., Mineola, N. Y.

Special applications are for tire cord, rubber, glass, and carpet yarns at warping, winding, quilling, circular knitting, and other operations that require tension control.

The new units retain all of the features of the older models. The chief difference is in the size of the electromagnetic coil. Larger units may be obtained with individual potentiometer control on each head.

When higher tensions are needed than can be supplied by one head, two or more heads can be set up together.

Circle T-37 on Reader-Service Card

Automatic Flat Machine

A fully automatic Model B flat-knitting machine will be featured by Queens Machine Co., 280 Starr St., Brooklyn 37, N. Y. It's made primarily to produce collars, cuffs, tails, and other trims for full-fashioned and cut-and-sewn sweaters, but it also produces garment sections with knit-on cuffs or tails.

There are high- and low-butt needles on both beds and a row of jacks on each bed back of the needles. A carriage has drop-type cardigan lock on each side that can be placed automatically in knit, tuck, or no-knit positions.

Circle T-38 on Reader-Service Card

Outerwear Knitting Machine

A machine, Supramat SF, to knit all kinds of outerwear and underwear and for continuous automatic production of rib borders with slack course and separating row will be shown by Steinberg Bros./Stonehill Knitting Machines Corp., 174 Scholes St., Brooklyn 6, N. Y.

Working widths are 40, 48, and 63 ins. in 4 to 14 gauge. Yarn carriers give four-color striping every course with double rows in pattern cycles as required. There are eight electric knot catchers and yarn-failure detectors and two electric trip switches to guard against needle breakage.

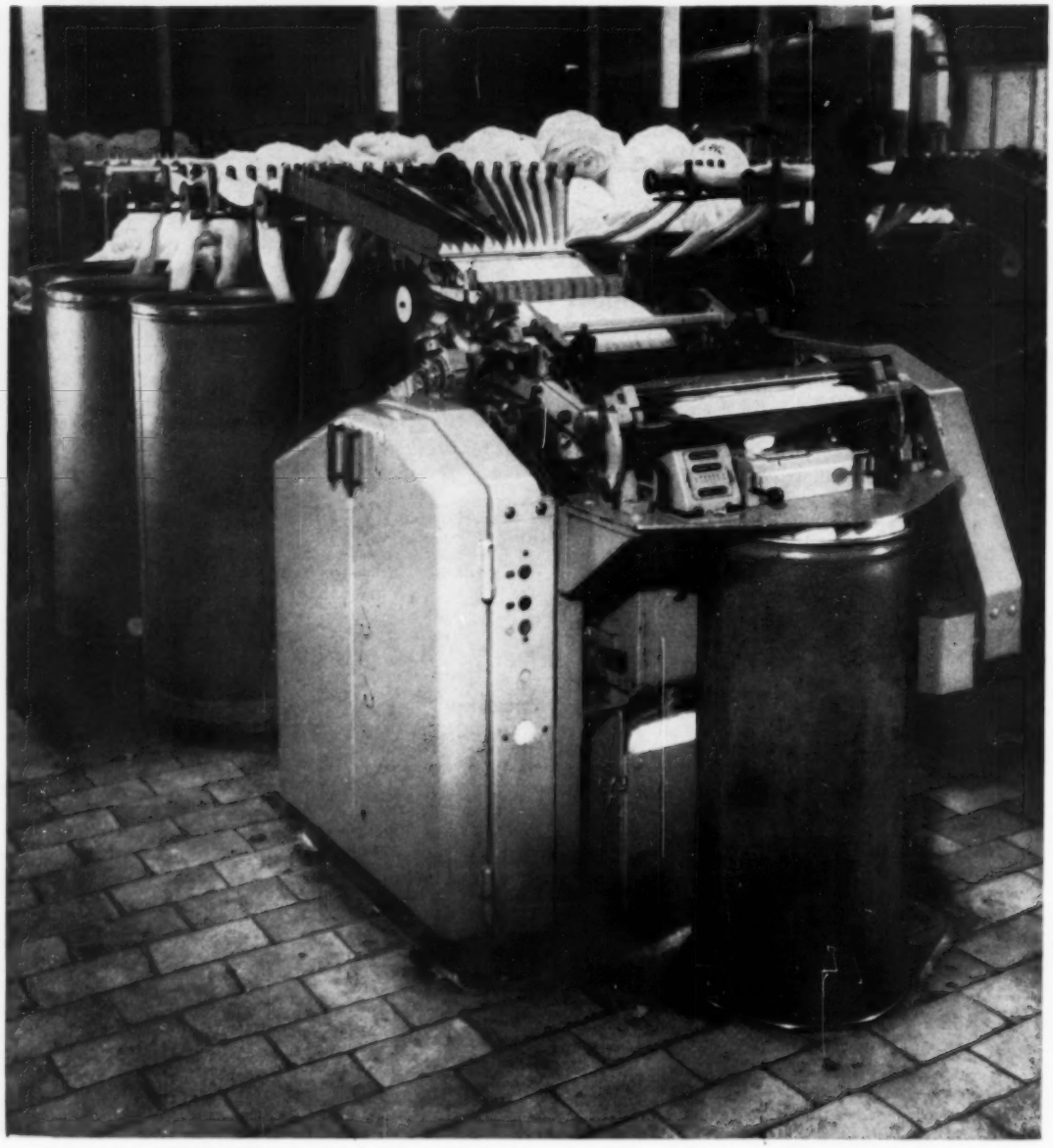
For great pattern possibilities, there are automatic racking, tucked and raised effects, four-color patterns, automatic separating row, automatic change from 2/2 to 1/1, automatic slack course, and automatic tension change. It's possible to produce almost any pattern of outerwear.

Circle T-39 on Readere-Service Card

WORLD FAMOUS

SCHLUMBERGER COMB

for French-Type Worsted Mills



OUTSTANDING for ready accessibility of all operating parts (including cylindrical comb) and for remarkable cleanliness of product. Settings made quickly.

Also other worsted preparatory machinery

N. SCHLUMBERGER & CIE

GUEBWILLER, ALSACE, FRANCE
Founded 1808

158 For more data, circle A-87 on Reader Service Card

For more data, circle A-88 on Reader Service Card

TEXTILE MACHINERY & AUXILIARY EQUIPMENT

Toe-closing machine — Bulletin describing specifications and operation of a two-needle, three-thread machine for closing toes on GeTaZ gusset-panel loopless stockings is available from Merrow Machine Co. **(F-1)**

Yarn-tension controls—That cover a range from almost zero to 100 grams and are especially suitable for use with tire cord, rubber, glass, and carpet yarns are described in a new bulletin. The tension controls can be used at warping, winding, quilling, and circular knitting. Lindly & Co., Inc. **(F-2)**

Variable-speed drives—That provide adjustable output speeds from a constant-speed motor source operating from standard a.c. circuits are discussed in a bulletin that covers construction features and drive specifications. Reeves Pulley Co. Div., Reliance Electric & Engineering Co. **(F-3)**

Card feeders—New Bramwell bulletin describes construction and performance of G-2 and G-3 machines. The G-2 feeder is for short-to-medium staple fiber that is processed at normal rates; the G-3 machine is for feeding extra-long staple fiber at a high rate of production. Geo. S. Harwood & Son, Inc. **(F-4)**

Improved twister—Bulletin tells how new machine twists all kinds of fiber, including glass and paper, into yarn with up to 14 plies; also explains how drop ply and roll laps are eliminated and a completely knotless yarn is produced. Collins Bros. Machine Co., Inc. **(F-5)**

Yarn-tension transducer—An instrument that graphically records faulty tension in winding processes is described in leaflet from Louis Newmark Ltd. **(F-6)**

High-speed synchronous motors—Illustrated bulletin shows design features, applications, and installations of constant-speed 50- to 1,500-hp. motors for general use. General Electric Co. **(F-7)**

Staple cutters—Bulletin describes cutters designed specifically for cutting man-made filament and glass fiber into uniform lengths at high speeds. Air suction is used to hold the fibers in position, and the relation of feed rolls and bed knife differ from other cutters. Taylor, Stiles & Co. **(F-8)**

Portable evenness tester—For carding, drawing, roving, and spinning that checks the uniformity of work in process so that faults can be corrected at the source described in release from Universal Winding Co. **(F-9)**

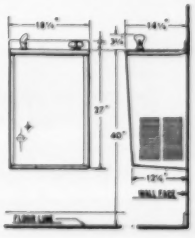
NOW... a cooler that's mounted on the wall off the floor!

Halsey Taylor ®

WALL MOUNT

..here by popular demand!

- A Beautifully Proportioned Water Cooler Mounted on the Wall, *Off the Floor*
- Plumbing & Electric Connections Within the Water Cooler—*Out of Sight*
- Cleaning Maintenance Problems Eliminated—No Dirt Catching Corners or Crevices
- Stainless Steel Top Contoured for Easy Cleaning
- Wall Face Splash Designed as an Integral Part of Top



The Wall-Mount is available in sizes 6, 11 and 16 gallon.

For further information write

The Halsey W. Taylor Co., Warren, Ohio

WHAT (you may ask) is a SALES ENGINEER from Stowe-Woodward?

First, he is a man.

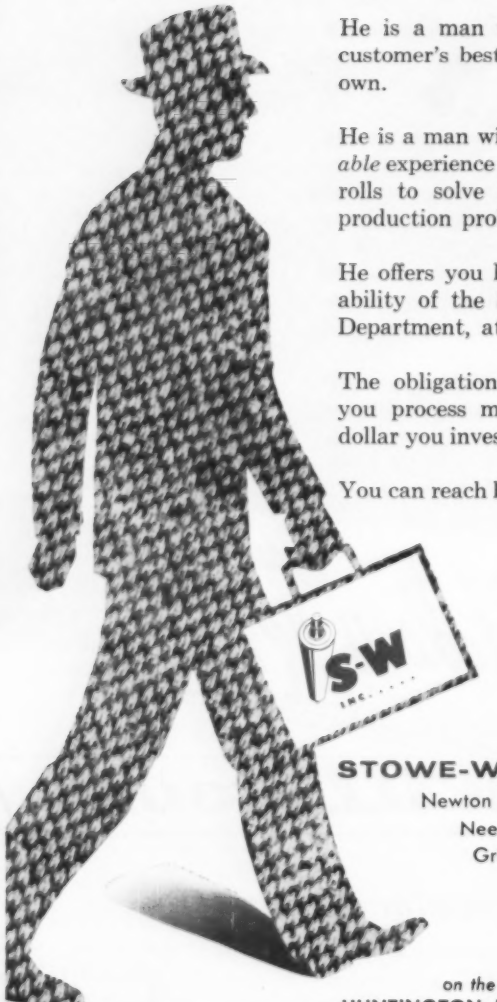
He is a man who *always* places his customer's best interests ahead of his own.

He is a man with many years of *valuable* experience in using rubber-covered rolls to solve knotty processing and production problems.

He offers you his experience, plus the ability of the S-W Technical Service Department, at no obligation to you.

The obligation is all his — to help you process more product for every dollar you invest in rolls.

You can reach him by calling S-W.



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NEW LITERATURE Continued

Warp-tension balance—An instrument that compares tensions in top and bottom sheds on running looms to aid in the control of set marks is described in a bulletin from Louis Newmark Ltd. (F-10)

Low-pressure booster pumps—Bulletin tells how centrifugal double-suction, single-stage units are designed for capacities of 500 to 2,500 gals. per min. Pumps can be driven by motor, gas or diesel engines, and steam turbines. Allis Chalmers Mfg. Co. (F-11)

CHEMICALS & SUPPLIES

Nonwoven bonding agent—Technical bulletin on polystyrene latex tells how the material is used to harden soft film-forming latices to bond fibers and pigments or to act as a saturant for glass rovings and nonwoven fabrics. Dow Chemical Co. (F-12)

Butenediol—Revised technical booklet on 2-butene, 4-diol describes physical and chemical properties and discusses esterification, reaction with halogens, nitration, ether formation, and other factors that affect its use as a textile assistant. Commercial Development Dept., General Aniline & Film Corp. (F-13)

Bleaching, oxidizing, and stripping—With Textone, a sodium-chlorite product, are discussed in a 26-p. illustrated booklet that provides a ready source of information for textile mills using the chemical. Chemicals Div., Olin Mathieson Chemical Corp. (F-14)

Dyeing theories and techniques—Are explained in a handy booklet that covers general description of textile fibers, classification of dyes, explanation of dyeing processes, and specific classes of dyes for different fibers. National Aniline Div., Allied Chemical Corp. (F-15)

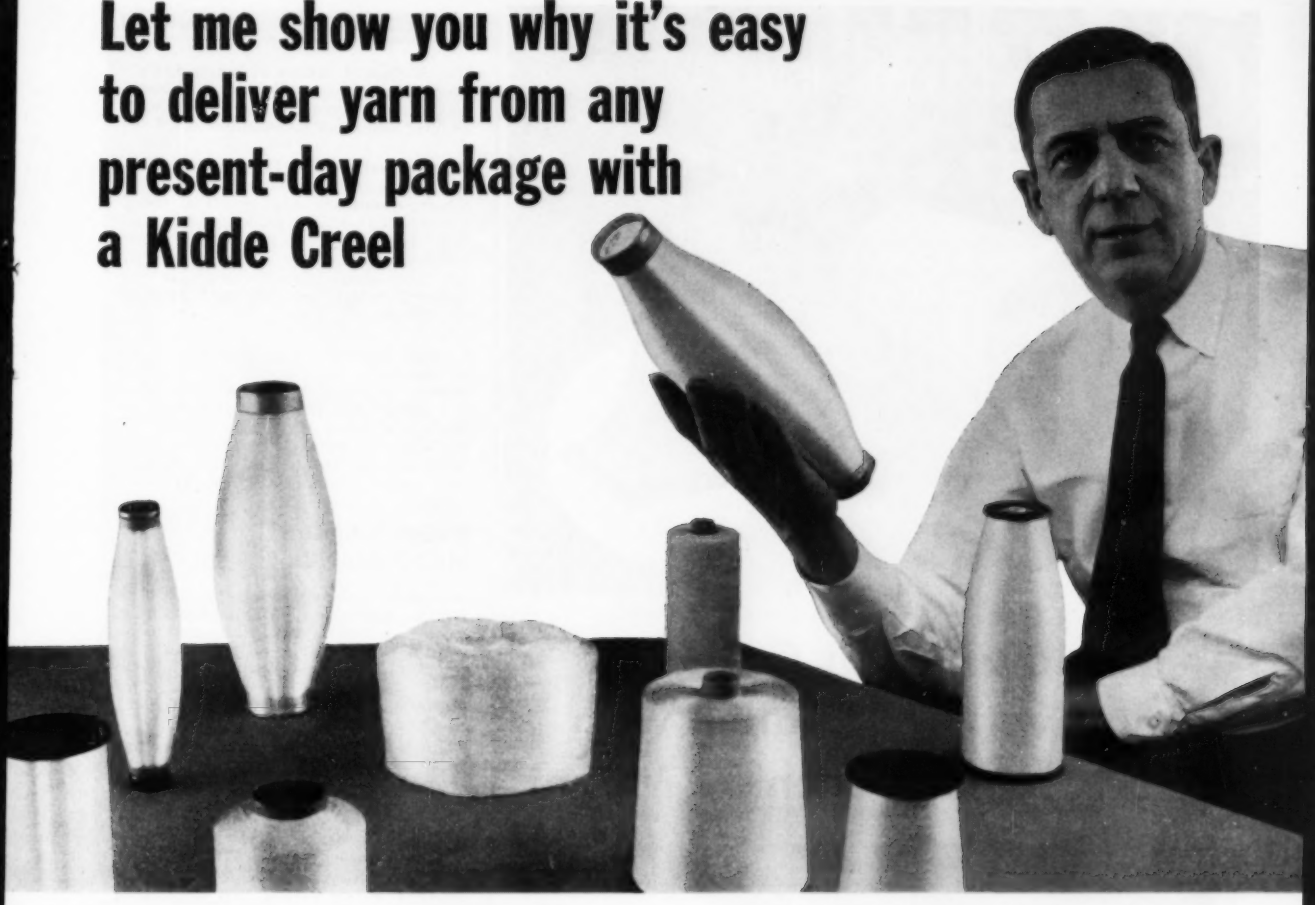
Sodium bisulfite—Physical properties, typical analyses, and specific uses in the textile industry are discussed in technical bulletin from Inorganic Chemicals Div., Monsanto Chemical Co. (F-16)

Antisoil coating—For bags and other surfaces is described and physical and chemical properties are given in technical bulletin on Syton P, a colloidal-silica solution, from Inorganic Chemicals Div., Monsanto Chemical Co. (F-17)

Antistatic agent—Leaflet outlines the advantages of finishing napped man-made-fiber fabrics with ASTM 108, an antistatic agent, and gives the manufacturer's recommendations for proper application so that the static charge leaks off even after a long series of washings. Onyx Oil & Chemical Co. (F-18)

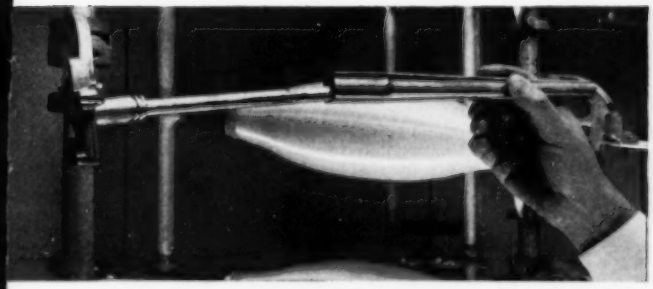
Package dyeing—With vat dyes is discussed in considerable technical detail in 65-p. manual illustrated with color plates. Topics covered include package machines, dyeing procedures, practical mill formulas, scouring and

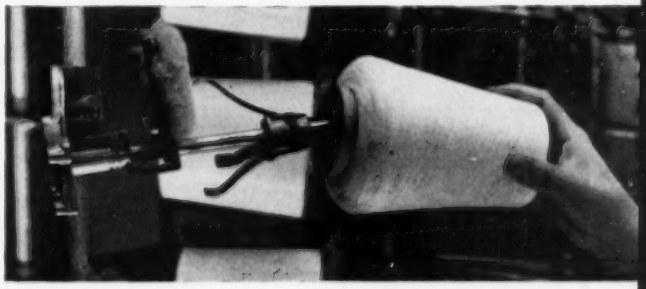
Let me show you why it's easy to deliver yarn from any present-day package with a Kidde Creel



You need only a basic holder and adapters to handle any yarn packages on the Kidde creel. You can see in the picture at bottom left, for example, how easily the basic pirn pin can be equipped with adapters to handle any pirn of textile yarn made today. The snap-on holder shown next to it accommodates any taper cone, as well as a range of straight packages. What's more, we'll design holders and adapters for future packages to accommodate them on the present Kidde creel.

Of course, this is only one Kidde feature. We could describe our tension devices and the uniquely simple Kidde stop-motion. We could explain how Kidde makes a creel to your specifications and how easily you can adjust its clamp-type construction to fit your changing needs. But we have a booklet that does all this. We'll be glad to send you one. Just write or phone.





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TEXTILE MACHINERY CORPORATION — BLOOMFIELD, NEW JERSEY

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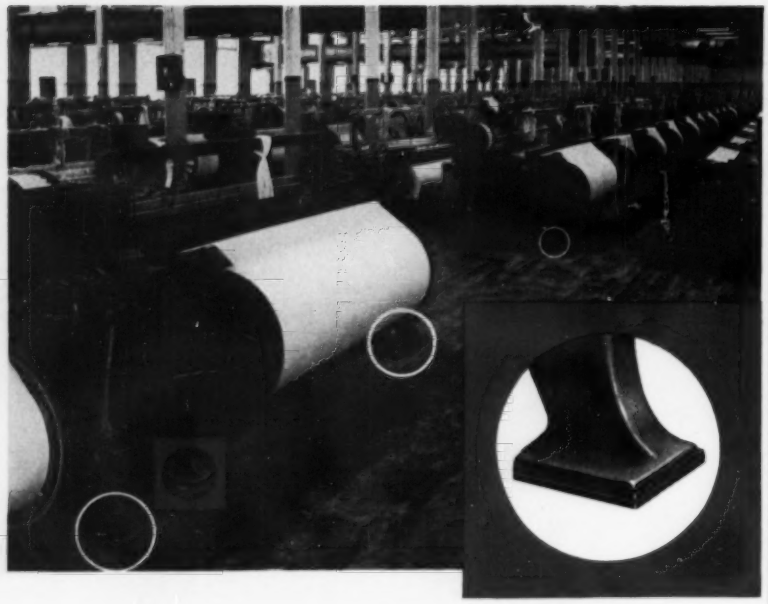
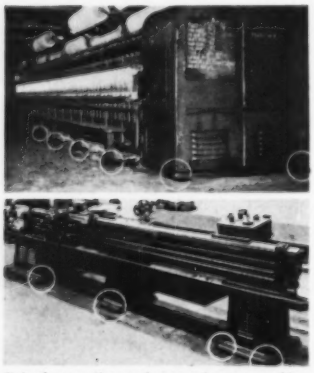


How to Cut Costs, Improve Performance with Unisorb Textile Machine Mounts



Unisorb saves time and money in your machine shop, too. There's a density for every type of machine tool, plus line of Unisorb Level-Rite Mounts.

Unisorb pads give you an exclusive three-way advantage every time you install or move a machine.

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FEB-59

NEW LITERATURE Continued

bleaching, and causes of faulty dyeing. Procedures are applicable to cotton, man-made fibers, wool, and wool blends. American Cyanamid Co. (F-19)

Carrier dyeing—For Dacron and Arnel is discussed in brochure containing recommendations and practical information concerning package, jig, and box dyeing. Laboratory test procedures and a chart outlining how to use other auxiliaries for scouring and dyeing are included. Emkay Chemical Co. (F-20)

Creslan dyeing—51-p. brochure gives procedures for applying various classes of dyes to the acrylic fiber and shows the fastness properties of the dyes along with the results of washing, perspiration, rubbing, and lightfastness tests. National Aniline Div., Allied Chemical Co. (F-21)

ENGINEERING & MAINTENANCE

Motor-application guide—For 1/20- to 400-hp. polyphase, single-phase, d.c. motors is designed to make motor selection easy. Nine major factors in selection are described, and charts show capacities and operating performance. Century Electric Co. (F-22)

Engineering-literature index—All technical and product bulletins and data sheets published by the industrial and valve divisions of the manufacturer are listed in a 24-p. bulletin from Industrial Div., Minneapolis-Honeywell Regulator Co. (F-23)

Smaller V-belt drives—An illustrated 44-p. booklet gives construction and performance features of a new line of drives that are smaller, lighter, and cost less than conventional drives. Dodge Mfg. Corp. (F-24)

Motor-selector guide—Gives concise selection data in tabular form to help users of a.c. motors up to 200 hp. in size. NEMA design classes, speed-frequency relationship, and current and torque values are explained. Reliance Electric & Engineering Co. (F-25)

Worm-gear speed reducers—Complete data book on a new-type reducer, with external fins for cooling, tells how the reducer can operate in three different positions to save space. Five tables give service factors, load ratings, dimensions, and weights. Link-Belt Co. (F-26)

"North-sky" light—Is produced by a new line of open-reflector and enclosed color-corrected fluorescent lighting fixtures for companies that work with color. Illustrated brochure from MacBeth Daylighting Corp. (F-27)

Corrosion-resistant gate valves—Made of stainless steel and fitted with a split ball-and-socket wedge that automatically adjusts to tapered seating surfaces are described in bulletin from Jenkins Bros. (F-28)

Enclosed switches—Revised Catalog 83C along with Catalog 84 cover the

CARNITI
MODEL R.A.I.

Spinning frame
29″ wide,
all ball-bearing,
for cotton and synthetics
short and long fibers

CARNITI
HIGH-SPEED
ROLLER-BEARING
SPINDLES
for all
spinning and
twisting
applications.

For speeds up to
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Operates
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in operation
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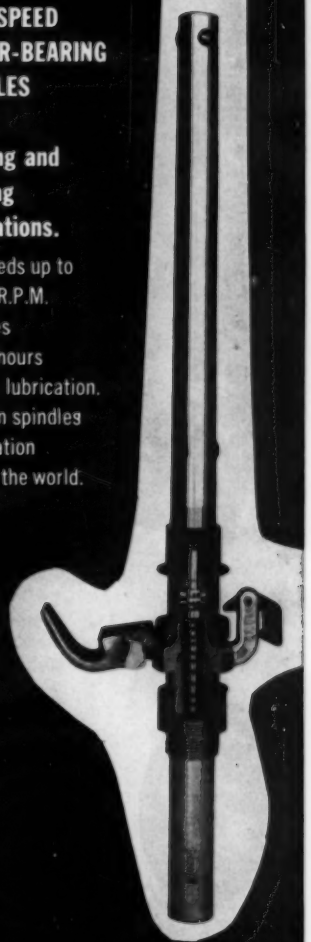

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Manufacturers of preparatory,
spinning and twisting machinery
for Cotton, Woolen, and Synthetics.
35 years' experience in
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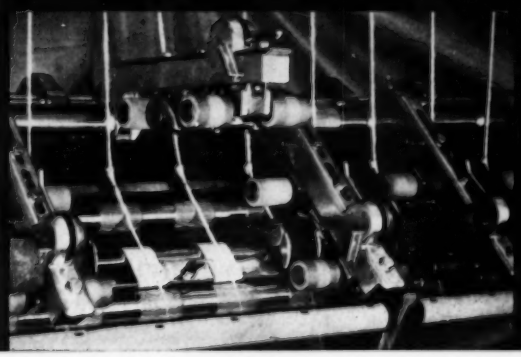

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CHANGE-OVERS
TYPE R.14.B

Three-roll double apron,
easy to convert.
Will process synthetics
up to 4″ staple.

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visibly better

One look at their production record will tell you that National-Sterling Ring Travelers offer visible proof of spinning and twisting efficiency at its best.

On job after job — in mill after mill — precision balanced, quality-controlled National Travelers consistently deliver more pounds of first class yarn . . . at higher spindle speeds . . . with fewer ends down. In each case, their uniform weight, dimensions, temper and finish have paid off in demonstrated production economies. They can do the same for you, too.

Try them and see! Whether you're running cottons, wools, synthetics or blends, an experienced National-Sterling Engineer will be glad to help you select the *right* traveler for your particular requirements. Write, wire or phone National Ring Traveler Company and Sterling Division, 354 Pine Street, Pawtucket, R. I. Southern Office and Warehouse: P. O. Box 293, Gaffney, South Carolina.

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NEW LITERATURE Continued

complete Micro Switch line of enclosed industrial and heavy-duty limit switches. Catalog 83C lists switches with a variety of actuator types designed to fulfill almost any general-purpose requirement for enclosed switches. Catalog 84 covers heavy-duty limit switches designed for great adjustability and extra-severe environmental resistance. Micro Switch Div., Minneapolis-Honeywell Regulator Co. (F-29)

Magnetic starters—Bulletin tells how nonreversing magnetic starters work better and last longer than ordinary starters. Color illustrations show component units and elements, standard features of design, sizes, and special-service enclosures. Cutler-Hammer, Inc. (F-30)

Stepless speed control—Booklet covers construction and operating features of varipitch integral-shaft sheaves for speed control in large machine drives and explains how mounting between two pillow blocks gives rigid support and yet provides flexibility. Allis-Chalmers Mfg. Co. (F-31)

Centralized-lubrication system—With valves adjustable from zero to 0.0032-cu.-in. delivery is described in literature from Alemite Div., Stewart-Warner Corp. (F-32)

Renewable-media air filter—Construction and operating characteristics of an automatic air filter that uses a 61-ft. roll of impregnated, reinforced media containing interlaced glass filaments that will not drip at 150° F. are discussed in a booklet from American Air Filter Co., Inc. (F-33)

Compact lift trucks—Circular describes operating and maintenance features of rear-wheel drive, 24-v. lift trucks that can pass under 6-ft. doorways and handle 1,000- to 2,500-lb. loads. Lewis-Shepard Products, Inc. (F-34)

GENERAL

Direct to total billing—On one machine that permits you to type, compute, and prove accounts receivable work is described in brochure from Burroughs Corp. (F-35)

Woven-wool structure—A technology report that explains how the structural compactness of wool fabrics causes them to behave in modern washing machines is available from the Wool Bureau, Inc. (F-36)

Lift trucks—Brochure covers performance, construction, and maintenance features of the Challenger line of trucks with capacities from 6,000 to 8,000 lbs. at 24-in. load center. Hyster Co. (F-37)

Make your own signs—With easy-to-use plastic vinyl letters and numbers, and cut out costly painting and stenciling. Booklet tells how to do it. M&C Products Co. (F-38)

Live-storage racks—Illustrated bulle-

HEAVY-DUTY RECTILINEAR COMBING MACHINE (Patented) Model PSL.

Greater production
Greater yield (less noils)
Better combing action and cleaner top.

SANT'ANDREA NOVARA

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Normal operating speed—115/130 nips per minute.

Production per hour: 9/10 Kg. approx., according to raw material processed.

Can feeding creel with 20/28 cans ϕ 400 mm. x 900 mm. high; with signal lamp when slivers break.

Nippers with special covering and adjustable safety device.

Automatic device (patented) to clear the top comb.

Delivery with special turning head, automatic stop motion and signal lamp when slivers break.

Delivery into 1 rotating can, ϕ 400 mm.

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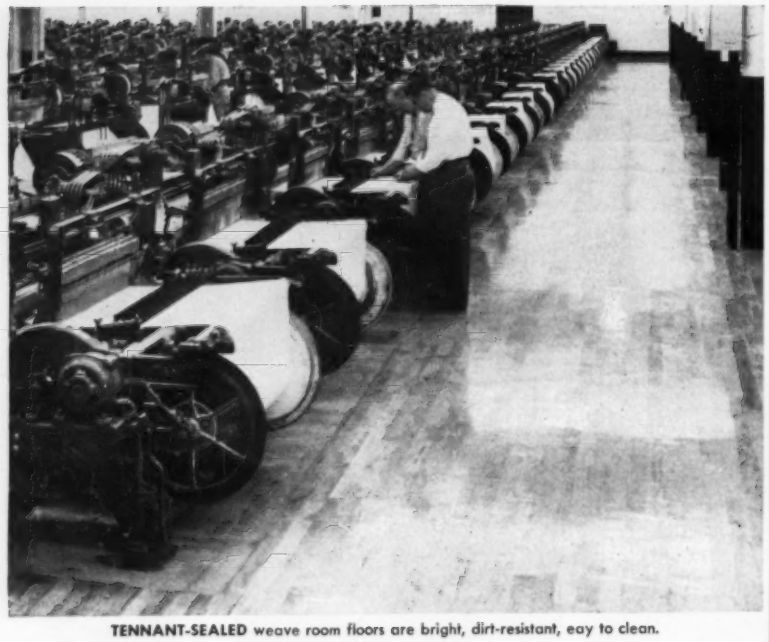

TENNANT-SEALED weave room floors are bright, dirt-resistant, easy to clean.

How your TENNANT Floor Specialist helps you save ⅓ in floor care costs

Would you like your mill to have floors as bright and clean and durable as this? And at an annual cost up to a third less than you're now paying?

Your TENNANT Floor Specialist *can show you how.*

Makes floors dirt resistant. He can demonstrate, for example, the exclusive TENNANT SYSTEM process that actually makes your floors up to 3 times more resistant to dirt. And when they *do* soil, dirt wipes off easily in a fraction of the usual time.

Seal lasts twice as long. Your TENNANT Man will also demonstrate heavy duty floor seals which are *unequalled for durability.* Since they end the need for frequent refinishing, you'll save many gallons of material each year.

Used in 1000 major mills. More than 1000 of America's leading mills are now saving money by using the complete TENNANT SYSTEM of floor care. And most are following an *individualized* program which their TENNANT Man developed to fit their specific needs in each department.

WRITE TODAY *for an analysis of your floor care problem. You may be surprised at the saving you can make.* G. H. Tennant Co., 737E No. Lilac Drive, Minneapolis 22, Minnesota.

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The Textile Industry's Most Widely Used

FLOOR MAINTENANCE SYSTEM

Methods

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FLOOR MAINTENANCE SYSTEMS

NEW LITERATURE Continued

tin gives specifications and applications for gravity-type racks available for live storage and order-picking operations. Lamson Corp. **(F-39)**

Office copying techniques—Illustrated booklet tells how to save money and increase efficiency in administration, accounting, sales, and other office operations by reproducing papers with Verifax dry-copying machines. Business Photo Methods Div., Eastman Kodak Co. **(F-40)**

Data-processing equipment—Brochure illustrates the broad range of data processing and shows specific equipment to use for punched cards, perforated paper tape, or magnetic tape. Remington Rand Div., Sperry Rand Corp. **(F-41)**

NARROW-FABRIC CHECKLIST

CONTINUED FROM PAGE 60

Creased or Tangled Ribbon

1. Ribbon threaded through loom wrong
2. Wrong fabric boxes or guides
3. Ribbon tracked with a guide bar instead of being held with spring strips on wide ribbons

Action To Correct

1. Thread the ribbon right
2. Put the right boxes or guides on the loom
3. On wide ribbons, always use spring strips

To Prevent Future Defects

At warp start-ups, put on correct guides and use the right boxes; if ribbon is No. 5 or wider, make spring strips; show weavers and ribbon cutters how to handle ribbon.

GLENWOOD MILLS

CONTINUED FROM PAGE 53

the spinning frame, they are not handled again manually. An automatic conveyor station in the spinning room lowers full boxes of filling to the weave room and returns empty boxes.

Batteryhands slip the boxes off a gravity-roll conveyor onto their trucks. This way of handling filling has significantly reduced soiled and broken filling.

Warp spinning is directly west of filling spinning on the third floor and is adjacent to spoolers and warpers.

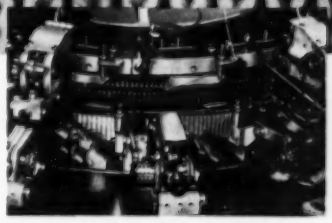
Warper-Stop Average Is Low

Warpers average only 4½ stops per 31,000 yds. This low stoppage is ac-

This NEW SUPREME Model BRW Puts YOU On Top Of The *BULKY KNIT* WORLD

- **Gives you *unprecedented* bulky knit variety and flexibility at *5 to 20 times* the output of *any other machine*.**
- **Knits 1 x 1 Rib and Half Cardigan bulky sweater and outerwear strips . . . in an infinite variety of colors and structures in Solids, Automatic Variable Stripes, Patterns, Textures and Combinations . . . maximum production rate of 1 strip per minute—100 yards per hour.**
- Produces body and sleeve strips with attached trims and *easy, clean-selvage draw thread separations.*
- Single operation . . . Independent tight and loose controls give desired structure and elasticity on body as well as cuff or waist.
- Standard 30″ diameter machine has from 3 to 6 cut cylinders and dials—16 feeds with 4 color striping boxes on alternate feeds—(Each of the 8 boxes is individually and automatically controlled for maximum selection without production loss)—Pattern wheels on all 16 cylinder feeds—Automatic tuck controls on all 16 cylinder and dial feeds permits automatic switch from half cardigan to 1 x 1 cuff stitch.
- Handles up to 3 ends of 2/18 w.c. yarn. Has revolving yarn stand *with stationary, rubber-covered take-up.*

For a look at the BRW in action—contact Supreme today or Morris Kaplan Co., Exclusive Sales Agent, 932 Madison Street, Brooklyn, N. Y.



Knitting elements system in Supreme's new Model BRW

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94-02 104th STREET, OZONE PARK 16, N. Y.
Southern Representative and Showroom
The Mallack Co., 914 East 4th Street, Charlotte, N. C.

98-192

complished by keeping constant check on stops.

When a warper stoppage occurs, the cause is recorded on a special form that lists "piece-up, wild yarn, weak thread, bad knot, lint on drop wires, cut cheese, cheese run-out, cobweb cheese, tangled cheese, and doubtful." If the total stops get out of line for any given beam, the form assists in correcting the trouble.

The slasher room and drawing-in room are on the ground floor next to the weave room in an area occupied many years ago by the mill steam engines. Sizing materials are taken from boxcars and stored in the size-preparation room just a few feet away. Size is prepared, homogenized, and stored in this department in all-new equipment.

Two new nine-cylinder slashers run at 100 yds. per min., and controls are fully automatic. The slashers have to be operated only two shifts to keep the weave room running three shifts.

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is the specialty of L. F. Dommerich. Since 1840, our comprehensive financial service has helped firms attain greater profits without financial headaches. Whether your business is in the $300,000 or the $30,000,000 class, a Dommerich plan, tailored to your needs and your goals, can help it thrive and grow.

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Weave-Room Efficiency Is High

The weave room is now one complete room with 1,278 rebuilt looms all on the first floor. Looms are E-model and weave fabrics 39 to 45 ins. wide. Speed is 172 ppm.; speed before rebuilding was 162.

Loom efficiency is 97½%, and seconds have headed downward.

Warps are retied in the weave room with a new portable tying-in machine that ties a full warp in a single hand.

Presently weave-room temperature with evaporative cooling is being held at 80° F., and relative humidity is 78%.

Cloth is doffed at looms in minimum 250-yd. rolls and is taken to the adjoining cloth room.

Cloth goes in one door of the cloth room and out the other side in one continuous movement. Graded cloth comes off a conveyor and is placed on burlap and paper on a pallet truck. It remains on this truck until it's baled and shipped.

YARN MACHINERY

CONTINUED FROM PAGE 61

made into a 60.3-grain sliver on the finisher drawing with a draft of six.

Both sets of drawing frames run 151 ft. per min. and are equipped with 15x-36 cans that hold 26.7 lbs. Uster evenness ranges from 9 to 11%. One man runs all 32 deliveries.

Eight new 10x5 roving frames were installed. The 8-in.-gauge machines have 120 spindles each and are equipped with stop motions and suction cleaning.

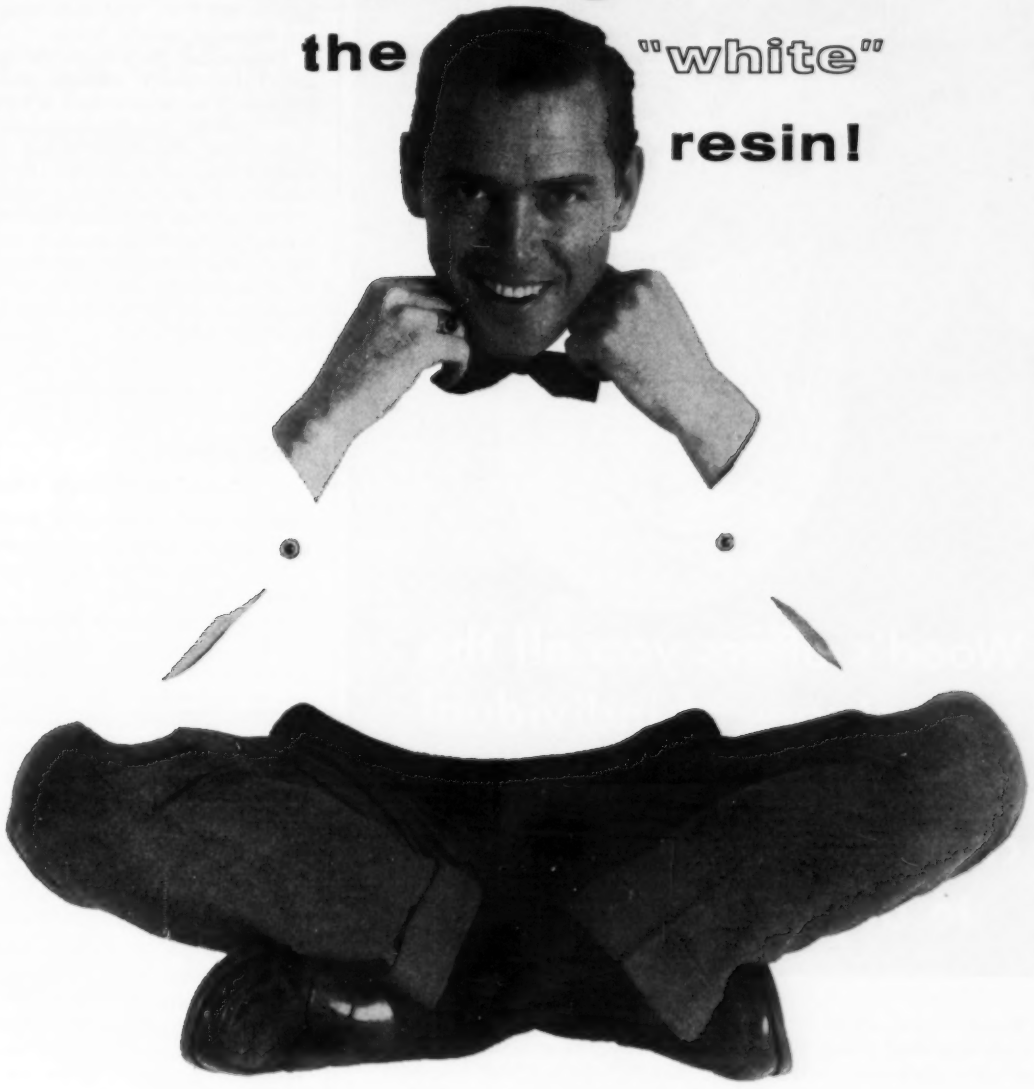
The frames are set to produce 32-oz. packages of 2- and 2½-hk. roving. Front-roll speed is 145 rpm., draft 14.47 for 2-hk. roving, and jack-shaft speed 345 rpm. Variable-speed drives with 3-hp. motors are used. Two men operate four frames each.

Spinning Frames Are Replaced

Old spinning frames were replaced with 49 new 3½- and 3¾-in.-gauge spinning frames to bring the total spindleage to 16,776. The frames have 9- and 10-in. traverses, 216 to 288 spindles, 2-in. double adjustable rings, two-apron drafting, antifriction front top rolls, open creels, suction cleaners, and overhead traveling cleaners.

All roving is run double at the creel. For 40s yarn made from 2-hk. roving, draft is 40, traverse 9 ins., front-roll speed 145 rpm., twist as specified,

Announcing the "white" resin!



RESLOOM* E-63

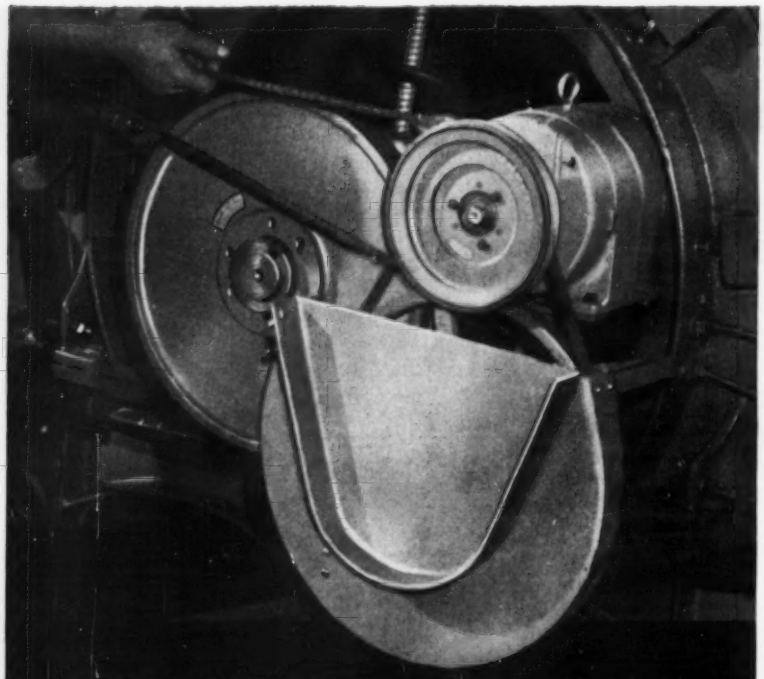
A NEW FINISHING RESIN FOR WHITE WASH & WEAR COTTONS — SHEDS CHLORINE, REDUCES SCORCH DISCOLORATION, KEEPS WHITES "WHITE" AND ODOR-FREE!

Here is the W&W finish that resists chlorine in laundering! White cottons treated with Resloom E-63 come out really white—never "soil-grey"—and they smell fresh, odor free! There's little, if any, discoloration due to scorching, and the cottons are crush-resistant and dimensionally stable. Resloom E-63 can be accurately controlled to create a wide variety of hand. **Write today for complete processing data** to Monsanto Chemical Company, Plastics Division, Room1211, Springfield 2, Massachusetts.

*RESLOOM, STYMER, LYTRON: REG. U. S. PAT. OFF.

Monsanto

Other Monsanto textile chemicals include Resloom E-50 cyclic urea resins; Resloom HP and M-75 melamine resins; AC Catalysts; Stymer* Sizes; and Lytron* Polystyrene Latices.



Wood's offers you all the advantages of individual card drives without clutches or gear reducers to adjust or maintain

Wood's Card Drive is the textile industry's newest, yet most widely specified drive. This simple, sturdy, smooth-starting unit not only eliminates cumbersome flat belt pulley and lineshaft construction, and accompanying hazards and power losses, but it also has no clutches or gear reducers to adjust, maintain or lubricate.

Improved product quality and quantity are assured through elimination of belt slip and better control of operating speeds as well as reduction of static and the amount of lint and dirt in the atmosphere.

Important, too, is the fact that Wood's Card Drive not only costs less to maintain, but it costs less to buy than any other individual card drive available.

Write, Wire or Phone for Details and your copy of Bulletin 6100

Woods

T. B. WOOD'S SONS COMPANY
CHAMBERSBURG, PENNSYLVANIA

ATLANTA • CAMBRIDGE • CHICAGO • CLEVELAND • DALLAS

spindle speed 10,300 rpm., traveler 6-0, traveler change 150 hrs. (average), bobbin size 5 oz., and ends down 20 per thousand spindle hours.

Trenton has 10 120-spindle spoolers, 5 100-spindle winders, and 28 twisters. The twisters have a total of 5,976 spindles that run from 5,400 to 7,200 rpm. Front-roll (1½-in. dia.) speed is from 50 to 76 rpm. Twisting usually is done from spooler packages.

Disk waxing, emulsion, and conditioning treatments are available according to the customers' specifications. Winder packages are usually 6x7¾-in. cones, and dye tubes hold from 9,800 to 24,200 yds.

GLASS FABRICS

CONTINUED FROM PAGE 63

rolls are used. On coarse constructions, regular temple burs are used.

Both plastic-covered feeler tips and wire-ring tips are used.

Loom settings must be very close: the pick is timed at 7½ ins.; pickerstick stroke is 7½ ins.; lug straps are 8½ ins. or higher from the parallel; and harnesses cross at the front-center position. These settings are checked regularly by Ernest A. Forand, mill superintendent.

Keeping cloth clean is a big problem because glass fibers shed badly at the loom. But cleaning is done only at warp-outs and is done with compressed air and rags.

Batteryhands at Flightex have 20 looms, weavers have 20 looms, and loomfixers have 40 looms.

During the work week, relative humidity is kept at 75% and temperature is 70 to 75° F. Over the week end, relative humidity is lowered to 60%.

POINTERS FOR SUPERVISORS

CONTINUED FROM PAGE 119

both from you and to you.

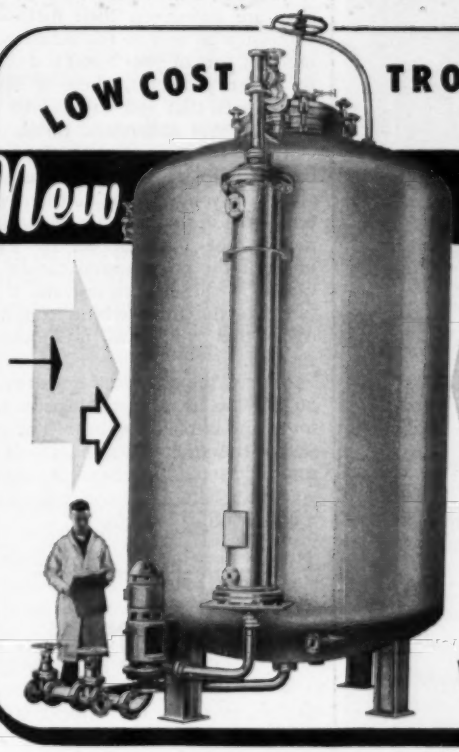
Even if you are aided by detailed written reports, spoken communications are essential. They are more effective if you combine the talent of good listening with the ability to express your own instructions and ideas clearly and concisely.

Second, good listening calls for undivided attention. To savor the full import of what superiors, associates, and subordinates are trying to convey

For more data, circle A-98 on Reader Service Card

LOW COST TROUBLE-FREE OPERATION
...EASY INSTALLATION

New ALLEN PACKAGE DESIGN KIERS



For boiling or bleaching all types of cotton goods from gauze to heavy twills, these new ALLEN stainless steel Package Design kiers offer unusual opportunities for more profitable operation to small and medium sized bleacheries and those doing fine fabrics. Large plants, too, find them extremely useful for short runs and special fabrics. In many cases, they are replacing continuous bleaching operations for certain types of goods. Allen Package Design Kiers feature:

- **A completely prefabricated unit — pump and heater are integral parts of the kier — for easier installation and maintenance.**
- **Smooth, stainless steel interiors eliminate rub, rust and stain marks.**

Write today for circulars giving complete information on this as well as Allen kiers for knit goods and kiers for cotton and cotton batting.

William Allen Son's Company
SHREWSBURY • MASSACHUSETTS

A Division of O. G. KELLEY & COMPANY, Boston 22, Mass.

For more data, circle A-99 on Reader Service Card

TWO FINE BOBBIN HOLDERS—ONE DEPENDABLE SOURCE

BENDIX* SPIN-MASTER BOBBIN HOLDER

Here is the finest bobbin holder ever designed. Adaptable to all types of creels, the Bendix Spin-Master is a toggle type bobbin holder which provides smooth, effortless creeling with every type of creel. Its 5/8-inch body and automatic action permit use in all standard bobbins from 8 x 4 to 12 x 7.

*REG. U. S. PAT. OFF.

ECLIPSE* BOBBIN HOLDER

Favorite of the textile industry for many years, this spring type holder is still available from Bendix-Elmira. Adaptable to all creels, it provides an easy creeling motion and can usually be furnished for two sizes of bobbins —8 x 4 and 10 x 5 or 10 x 5 and 12 x 6, for example.

Odell Mill Supply Co., Greensboro, N. C.
North Carolina Virginia

Greenville Textile Supply Co., Greenville, S. C.
South Carolina Georgia
Alabama Tennessee

Export Sales:
Bendix International,
205 E. 42nd Street,
New York City

ALSO FURNISHED AS ORIGINAL EQUIPMENT BY LEADING TEXTILE MACHINE MANUFACTURERS

ALL OTHER INQUIRIES TO:

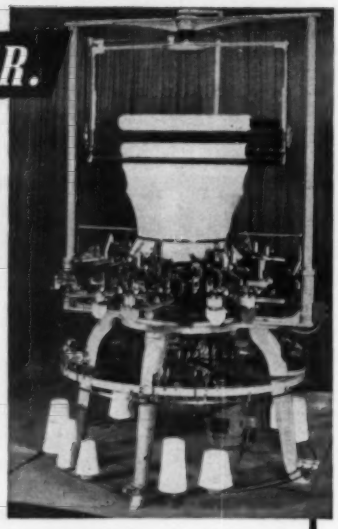
Bendix-Elmira
Eclipse Machine Division • Elmira, N. Y.

Bendix AVIATION CORPORATION

For more data, circle A-100 on Reader Service Card

ALL NEW...
TOMPKINS S-1 JR.

MAKES THE MOST PERFECT CLOTH POSSIBLE

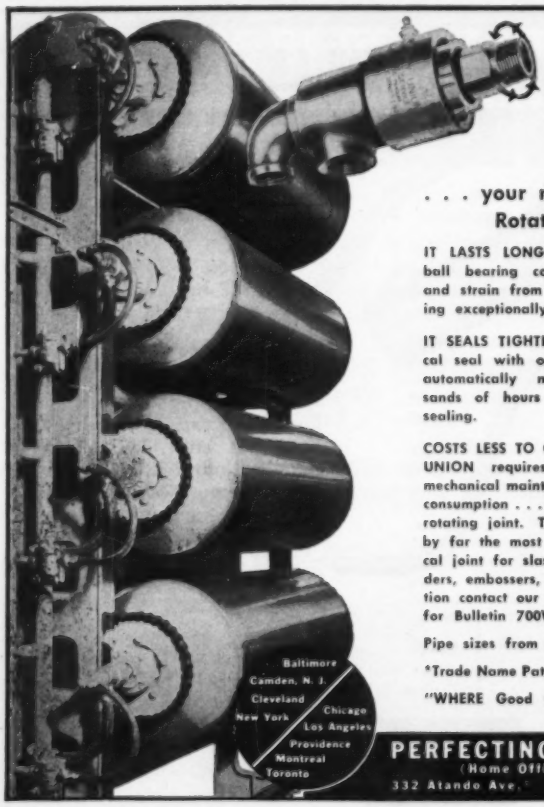


HERE'S A TYPICAL EXAMPLE...
Model S-1 Junior making fleece with 400-lbs. of Carter 26's and 8's —five feeds, 18" cylinder, running time 68-turns per minute . . .

- MINIMUM OF IMPERFECTIONS AND BROKEN NEEDLES

You can produce any class of cloth in the wide range of circular spring needle knitting—in greater quantity, with less waste and less needle breakage—on the New S-1 Junior! It gives you the proven Tompkins system in fully modern form . . . with triple stop motions, furnishing wheels, new gearless drive, automatic oiler and air cleaner! Get the full story now . . . be among the first to profit!

TOMPKINS BROS. CO.
623 ONEIDA ST. • SYRACUSE 4, N. Y.
Makers of Circular Spring and Latch Needle Knitting Machinery...Since 1846
For more data, circle A-101 on Reader Service Card



ROTARY UNION*

. . . your most economical Rotating Joint

IT LASTS LONGER Self-aligning and ball bearing construction take stress and strain from moving parts—providing exceptionally long service.

IT SEALS TIGHTER Precision mechanical seal with optically flat surfaces—automatically maintained—give thousands of hours of perfect leakproof sealing.

COSTS LESS TO OPERATE The ROTARY UNION requires no adjustments or mechanical maintenance . . . cuts power consumption . . . and outlasts any other rotating joint. The ROTARY UNION is by far the most reliable and economical joint for slashers, dry cans, calenders, embossers, etc. For full information contact our nearest office or write for Bulletin 700W.

Pipe sizes from ¼" through 3"

*Trade Name Patented

"WHERE Good Connections COUNT"®

PERFECTING SERVICE CO.
(Home Office and Factory)
332 Atando Ave. Charlotte, N.C.

to you, you must concentrate on what they are saying, on their method of expression as well as the actual words used. If part of your mind is dwelling on other problems, there is always the danger that you will fail to hear the facts and understand them.

Third, the proper setting for listening will help. It will aid your listening ability if you are not constantly interrupted, if you can talk where hearing is not handicapped by excess noise, if the conversation can be private if it calls for privacy, and if you can take the time, within reason, to cover the subject as it should be covered.

Finally, the quality of empathy will help. This is a psychologist's word for saying in plain English: "Put yourself in the other guy's shoes." If you can understand his viewpoint, whether you agree with it or not, you can do a better job of listening.

NEW SLASHER CONTROLS

CONTINUED FROM PAGE 66

change to offset the erroneous one.

Therefore Enka uses a second timer, a correction-delay timer, to distinguish the difference between a necessary change and a temporary wet condition. The maintenance man sets this timer to act immediately from any point from 0 to 60 secs.

With this delay, virtually any degree of moisture variation is possible with a stable speed; yet it changes in large amounts for fast and positive corrections. The result is, Enka can set the correction-delay timer for speed stability on any warp from a jittery or very responsive position to an extremely sluggish or poorly responsive position.

When a dry or wet condition in the warp has remained long enough to justify changing the slasher speed, the red pointer on the correction-delay timer reaches zero.

Then a third timer, the amount-of-correction timer, is set to provide a substantial but not excessive change in moisture.

If the maintenance man sets this control too low, it is sluggish again; and if it's set too high, it overdoes its job and must act a second time to correct its original overcorrection.

Since the length of time set in seconds has a direct bearing on the yards-per-minute change in speed and ultimately on the percentage regain change in moisture, the maintenance

For more data, circle A-102 on Reader Service Card

man can set the timer to the most desirable and responsive position.

After a set amount of correction is applied, a fourth timer for frequency of correction begins to run out the period during which the control must wait to measure the effect on its initial correction.

Between 11.25 and 13% moisture regain, the control reduces slasher speed to retain the desired 11%.

But because warp quality must be controlled closely, a slasher is stopped automatically when moisture exceeds 13%. A fifth time cycle set to approximately 10 secs. is used here; and when the slasher stops, an alarm is sounded to notify the operator of a wet-warp condition.

The large industrial-type timers are clearly marked to show how each affects the controlled response to moisture. Finally after the desired regain is obtained, the control becomes dormant and the maintenance man's only job is an occasional check of the recorder chart.

NEW TRAINING METHOD

CONTINUED FROM PAGE 51

these large-scale weaves, no verbal descriptions are necessary. The instructor measures the trainee's understanding of the weave by having the trainee form her own weaves with elastic on a light metal frame. Again no verbal instructions are given. Each of the four basic weaves are introduced on these frames.

As the trainee becomes more confident, the size of the weave is reduced. Finally the normal-size weave is sewed, first with and then without a magnifying glass. By this gradual acquisition of correct responses, the trainee does not learn anything that later has to be unlearned.

To avoid overlearning any weave and to prepare for quick transition to new and related types of cloth, the trainee is given all four basic weaves for comparison and practice at the start of the course. In this way, she learns to understand each weave in relation to the others.

By reducing to a minimum the number of signals that call for action and by eliminating all irrelevant ones, training time is reduced and fewer errors are made. This control of signals is especially important to trainees who have difficulty in learning.

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SPECIALIZED ENGINEERING
SPECIALIZED EXPERIENCE
SPECIALIZED MACHINERY
FOR
TWISTING • FORMING
STRANDING • BUNCHING
COTTON • JUTE • MANILA • SISAL
NYLON • DACRON • ORLON • SARAN
PAPER • POLYETHYLENE • GLASS

TEXTILE • WIRE • CORDAGE and OTHER INDUSTRIES

HASKELL-DAWES
MACHINE CO., INC.
2231 E. Ontario Street
Philadelphia 34, Pa.

For more data, circle A-104 on Reader Service Card

IF THIS IS YOUR PROBLEM

If you need effective, highly readable, smartly illustrated company literature (booklets, pamphlets, manuals) to display your products, inform the public of your operations, attract key personnel to your plant, train employees, and perform any of the other communicative functions that are vital to your business . . .

THIS IS YOUR ANSWER

The McGraw-Hill TECHNICAL WRITING SERVICE has a staff of more than 150 highly-trained writers, editors, and illustration specialists whose job it is to create technical and general literature for industry. We write, illustrate, design, and print Equipment Manuals, Product Bulletins, Handbooks, Company Histories, Annual Reports, and other specialized material. Save money and time. Let our staff be your staff for Technical and Business publications.

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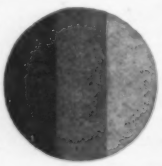
LOngacre 4-3000

Reduce textile flaws caused by air-borne lint, dirt, soot, abrasives, smoke with the

HONEYWELL ELECTRONIC AIR CLEANER

These airborne spoilers mean costly flaws in your finished textiles—lint spots on printed cloth, staining, streaking and discoloration. The Honeywell Electronic Air Cleaner reduces these flaws by electronically trapping airborne dirt particles 100 times smaller than those stopped by mechanical (fibrous) filters.



The left side of this dust spot paper was exposed to uncleaned air. Center section was exposed to air cleaned by a mechanical (fibrous) filter. Right side was exposed to air cleaned with a Honeywell Electronic Air Cleaner. (Actual unretouched photo of results using standard dust spot techniques).

PAYS FOR ITSELF! Send coupon today to learn how the Electronic Air Cleaner can reduce your textile rejects and improve your textile quality.

MINNEAPOLIS-HONEYWELL
DEPT. TW-5-66,
Minneapolis 8, Minnesota
Please send free copy of Electronic Air Cleaner booklet, "A Close Look at Air-Borne Dirt." We have the following problems:

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*Name*_____

*Company*_____

*Address*_____

*City*_____ *Zone*____ *State*____

Circle A-105 on Reader Service Card

CONTINUED FROM PAGE 154

Duplex Recorder

A compact recorder for plotting two electrical quantities side by side on a single chart is being produced by General Electric Co., Instrument Div., Schenectady 5, N. Y.

The double record on a single roll permits faster reading and helps eliminate possible reading errors. Although it contains two separate flexible recording elements, it occupies one-third less space than a pair of synchronously operated single-element recorders.

Circle T-40 on Reader-Service Card

Unit Bundler

Bundles of 4, 6, 8, or 12 smaller packages of textile items can be wrapped on a machine available from Battle Creek Packaging Machines, Inc., Battle Creek, Mich.

The Model 850 machine will produce 1 to 18 bundles per min. of packages that may vary in size from 5 to 12 ins. long, 4 to 10 ins. wide, and 1 to 8 ins. high. A wide range of overwrap materials may be used with the machine, which is available with an overprinting attachment, an electric-eye positioning device, and a label applicator.

Circle T-41 on Reader-Service Card

Switch With Overtravel

A compact switch with high overtravel for trouble-free operation has been developed by Minneapolis-Honeywell Regulator Co., Micro Switch Div., Freeport, Ill. A special plunger mechanism provides a minimum of 0.200-in. overtravel without curtailing switch life.

Median mechanical life of the switch, 6PL41, is 2-million operations at full overtravel. Snap-on terminals speed up wiring. The switch can be mounted from the side or through a panel.

Circle T-42 on Reader-Service Card

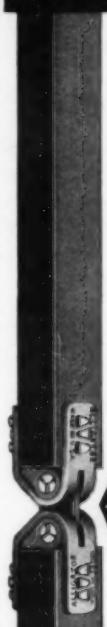
Floor-Surfacing Plate

A floor-surfacing plate to increase the life of heavy-traffic floors has been announced by Acme Steel Co., 135th St. at Perry Ave., Chicago 27, Ill. The material comes in 11¾-in. squares of 0.109-in. (12-gauge) hot-rolled steel.

It has small rectangular holes that produce anchoring prongs to be imbedded in concrete. The holes also

NOW! custom-made V-BELTS in any length with...

ALLIGATOR V-BELT FASTENERS



SIMPLE AS A, B, C!

When an endless belt breaks, merely cut off the required length of belt from a roll of Open End V-Belting, apply an Alligator V-Fastener and the machine is ready to "roll" again.

DESIGN NEW DRIVES WITH THIS IN MIND . . .

V-belts can now be made to any length . . . center distances are no problem . . . eliminate need for special length belts.

ONE STRONG JOINT

Permits fast and easy installation on all types of drives, particularly fixed center drives and drives with outboard bearings.

CUSTOM-MADE V-BELTS SOLD IN COMPLETE PACKAGE KITS — 5 SIZES!

ORDER FROM YOUR DISTRIBUTOR

SEND FOR NEW BULLETIN ON CUSTOM MADE V-BELTS V-227

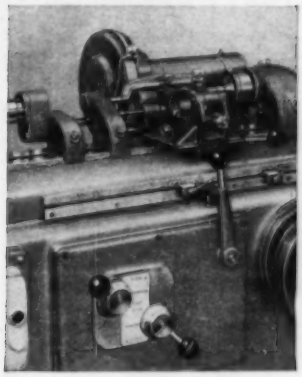
Flexible STEEL LACING COMPANY

4707 LEXINGTON ST. • CHICAGO 44, ILL.

Circle A-106 on Reader Service Card

FOR ABSOLUTE ACCURATE BUFFING OF SPINNING ROLLS

DRONSFIELD'S ROLL GRINDING MACHINE NO. 270 WITH HYDRAULIC TRAVERSE



Friction Driving Attachment No. 269 for use with Grinding Machine No. 270

This attachment has been designed for holding and driving rollers fitted with ball or needle bearings (without removing the shells) whilst being ground on the Dronsfield's Roller Grinding Machine No. 270.

Enquiries to—Messrs. Cotton-McCauley & Co. Inc.
3, Hammond Street, Greeneville, S. C. *and* 188, Main Street, Pawtucket, R. I.

DRONSFIELD BROTHERS LIMITED - ATLAS WORKS - OLDHAM - ENGLAND

For more data, circle A-107 on Reader Service Card

IMPORTANT MESSAGES TO READERS

See Pages 181 and 188

***for information on* NEW, READER-TAILORED . . .**

1959 FACT FILE

Always the best . . .

Now even better!

Publishing Date—

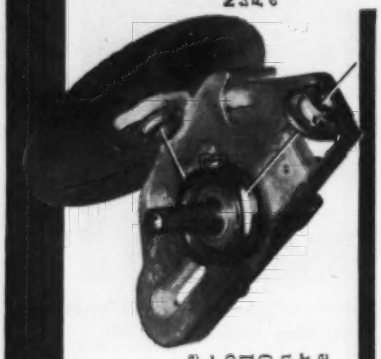
Mid-July.

FABRIONICS UNA-MAG

Automatically increases or decreases yarn tension uniformly on any number of ends.

FOR

- TENSIONS TO 100 GRAMS
- WARPING — Creel tension adjustment from a single power supply, all ends simultaneously
- WINDING — Individual control to desired tension
- CONING — Easily installed on standard coning equipment, to give desired tensions
- TWISTING — Tension control on any number of ends equally



The NEW two piece Fabrionics UNA-MAG tension control is an easily installed device for increasing yarn tension from one centrally located position simultaneously for any number of yarn ends.

Fabrionics UNA-MAG may be adjusted at a single power source to obtain a desired yarn tension of 80 to 100 grams using the steel alloy disc. Tensions to 40 grams are obtainable with the new Fabrionics 113 wear resistant aluminum oxide ceramic disc.

NOTE: Free literature, catalog and technical reports are offered by Fabrionics Corp. on their quality control instruments and devices.

Fabrionics CORPORATION

P.O. BOX 331, HUNTINGTON, L. I., NEW YORK

provide a partial concrete surface so that the finished floor is 76% steel and 24% concrete.

Circle T-43 on Reader-Service Card

Textile Marker

Piece ends, garments, or other textile articles can be permanently marked by means of a marker and a special ink developed for it. The inks come in four colors: white, black, yellow, and red. The products are available from Speedry Products, Inc., Richmond Hill 18, N. Y.

Circle T-44 on Reader-Service Card

Lamps

Color-corrected fluorescent tubes and silver-capped incandescent bulbs to give light similar to north-sky daylight are being offered by Macbeth Daylighting Corp., P. O. Box 950, Newburgh, N. Y.

Fixtures are 48½x24¼ ins., 88½x12½ ins., or 24½x12⅛ ins. long. Series TC are enclosed fixtures with diffusing glass, and SC series are open-reflector lamps.

Circle T-45 on Reader-Service Card

Yarn Conditioner

A vacuum vaporizer that has a 5-min. treating cycle for 2- to 3-lb. packages of yarn has been announced by Paramount Textile Machinery Co., 131 S. Wabash Ave., Chicago 3, Ill. Uniform moisture content and shrinkage are produced in every layer of yarn.

The machine, which requires 6½x11 ft. of floor space, has a floor-level ramp that automatically lifts yarn truck and floor track flush with the floor of the treating chamber. Push-button controls and a fully automatic treating cycle facilitate operations.

Specifications:
Capacity—96 2¼-lb. cones per cycle
Maximum operating pressure—45 psi.
Steam consumption—20 lbs. per cycle at 15 psi.
Air consumption—¼ cu. ft. per cycle at 80 psi.
Vacuum equipment—Water-cooled pump with capacity of 90 cu. ft. per min. at 22-in. mercury or 55 cu. ft. per min. at 26-in. mercury

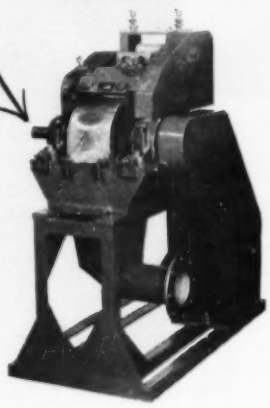
Circle T-46 on Reader-Service Card

Dialysis Separation System

Acids and other chemicals may be separated from solutions by a system that uses a dialyzer membrane that is resistant to acids; the system is marketed by Graver Water Condi-

announcing...

new TAYLOR-STILES no. 806 staple cutter



Designed for nylon, rayon, and similar fibres, in tow or sliver form. Cuts as fine as 1½ denier, 24 hours per day at high speed, with extreme accuracy and without fusing.

One reason for the accuracy of this cutter is the air suction system which holds the fibre in position and overcomes the air currents generated by the high speed of the cutting elements.

Many other novel features are the result of 6 year's research and development work. It is being used today by one of the largest yarn manufacturers in the country.

For complete description write for Technical Bulletin #217 today. No obligation.

Please send me a copy of your Technical Bulletin No. 217.
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Firm.....
Address.....
City.....State.....

TAYLOR, STILES & CO.
15 Bridge Street, Riegelsville, New Jersey

THE RIGHT ANSWERS IN 3 SECONDS!

MOISTURE REGISTER'S MODEL 5 checks moisture accurately in almost every known textile. Any untrained operator can use it effectively – in any stage of production – on cones, beams, skeins; loose or compressed yarns and fibers; Wool, Cotton, Nylon, Rayon, Dacron, Orlon, etc.

It can be calibrated on the spot by plugging the test electrode into the self-checking standard . . . then trimming to zero if necessary. It's always right on the money.

Model 5 features:

- Trims to Zero on the spot.
- Portable, rugged, simple to use.
- Gives right answers, anywhere.
- Factory-set to your needs.
- All common textiles.
- 2-week free trial.

SEND FOR NEW TECHNICAL DATA and information on 2-week free trial.

ELECTRONIC MOISTURE REGISTER Instruments

Moisture Register Company, Dept. TW
P. O. Box 910, Alhambra, California
Please send data on new Model 5's.

We are testing _____

in moisture range from ____% to ____%

Firm _____

By _____ Title _____

Address _____

City _____ State _____

Circle A-110 on Reader Service Card

tioning Co., 216 W. 14th St., New York 11, N. Y.

Circle T-47 on Reader-Service Card

Packaged Boiler

A hot-water heating boiler for forced circulation of hot-water heating systems is offered by Orr & Sembower, Inc., Box 1138, Reading, Pa.

Circle T-48 on Reader-Service Card

Lubricant

A grease that resists liquid fuels and solvents has been developed by Pennsylvania Refining Co., 2686 Lisbon Rd., Cleveland 4, Ohio.

Circle T-49 on Reader-Service Card

Teflon Adhesives

Teflon may be bonded to wood, steel, glass, and ceramics with two adhesives marketed as Ray-Bond R-86009 and Ray Bond R-86044 by Raybestos-Manhattan, Inc., Adhesives Dept., Bridgeport 2, Conn.

Circle T-50 on Reader-Service Card

Portable pH Meter

A self-contained meter that will measure the pH of solutions or fabrics at any stage of manufacture has been marketed by Analytical Measurements, Inc., 585 Main St., Chatham, N. J.

Circle T-51 on Reader-Service Card

Pillow Blocks

Relubricatable ball-bearing pillow blocks with improved seals and redesigned housings are being introduced by Fafnir Bearing Co., 37 Booth St., New Britain, Conn.

Circle T-52 on Reader-Service Card

Carton Stapler

An air-operated stapler that closes filled cartons or sets up empty boxes drives up to 400 large staple clips per minute, according to the manufacturer, Container Stapling Corp., 308 N. Park Ave., Herrin, Ill.

Circle T-53 on Reader-Service Card

Automatic Analyzer

Chemical analyses that are accurate to 1% in estimations of materials

LUBRIPLATE IS THE IDEAL LUBRICANT

—say leading Textile Manufacturers

LUBRIPLATE Lubricants have won acceptance in the textile industry because even with speeds up to 25,000 R.P.M., they have exceedingly long life and do not break down. LUBRIPLATE Lubricants range from the lightest oils to the heaviest greases to meet every requirement of the textile industry.

REGARDLESS OF THE SIZE AND TYPE OF YOUR MACHINERY, LUBRIPLATE GREASE AND FLUID TYPE LUBRICANTS WILL IMPROVE ITS OPERATION AND REDUCE MAINTENANCE COSTS.

LUBRIPLATE is available in grease and fluid densities for every purpose . . . LUBRIPLATE H. D. S. MOTOR OIL meets today's exacting requirements for gasoline and diesel engines.

For nearest LUBRIPLATE distributor see Classified Telephone Directory. Send for free "LUBRIPLATE DATA BOOK" . . . a valuable treatise on lubrication. Write LUBRIPLATE DIVISION, Fiske Brothers Refining Co., Newark 5, N. J. or Toledo 5, Ohio.

Circle A-111 on Reader Service Card

85 MILLS
NOW PRODUCING MORE HIGH QUALITY LAPS
WITH THE
LONG
PNEUMATIC LAP CONTROL SYSTEM

Patent No. 2,871,519 has been issued on the calender section controls, other U.S. and foreign patents on this and all other pneumatic devices produced by L&H are now pending.

SEND TODAY FOR NEW TEXTILE BROCHURE

Get the full story on all our pneumatic systems, especially New Pneumatic Clutch for Pickers.

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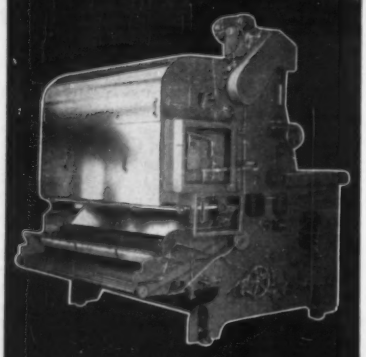

SPECIALISTS IN TEXTILE FEEDING MACHINERY SINCE 1863

50 LAGRANGE STREET
WORCESTER 8, MASS.

Circle A-113 on Reader Service Card

present in as little as a few parts per billion are continuously performed and recorded by an instrument developed by Technicon Controls, Inc., Chauncey, N. Y.

Circle T-54 on Reader-Service Card

Hazard-Safe Oven

Explosionproof switching and electrical heating elements that operate at black heat feature a laboratory drying oven offered by Blue M Electric Co., 138th and Chatham Sts., Blue Island, Ill.

Circle T-55 on Reader-Service Card

Stabilized White Oils

A series of white oils called Thermal White Oils is described by the manufacturer, L. Sonneborn Sons, Inc., 300 Fourth Ave., New York 10, N. Y., as having high resistance to discoloration by heat.

Circle T-56 on Reader-Service Card

High-Safety Solvent

Very low toxicity of 1,1,1-Trichloroethane is combined with good solvent action on oils, greases, and tars. The product is available from Fisher Scientific Co., 717 Forbes St., Pittsburgh 19, Pa.

Circle T-57 on Reader-Service Card

Fire Extinguishers

Dry-chemical rechargeable fire extinguishers of 2½- and 5-lb. capacities with streamlined cases have been developed by Walter Kidde & Co., Inc., 675 Main St., Belleville 9, N. J.

Circle T-58 on Reader-Service Card

Germicide

Textile-processing liquids that develop offensive odors because of bacterial growth can be kept odor free by alternate use of Germicide 66 and 68, developed by American Charcoal Co., 201 S. Green St., Detroit 17, Mich.

Circle T-59 on Reader-Service Card

Peelable Gum

Textile labels can be applied to garments with a peelable gum that will leave no residue on the most delicate fabrics. The product is marketed by Dennison Mg. Co., Framingham, Mass.

Circle T-60 on Reader-Service Card

The *Original* Electronic Static Eliminator, since 1904
Constantly Improved to give you guaranteed static elimination.
OVER 50 YEARS EXPERIENCE AND 'KNOW-HOW' IS AVAILABLE TO YOU WITHOUT OBLIGATION
Write and tell us about your static problems and we will make recommendations and quote prices.

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Circle A-114 on Reader Service Card

Men on the Move

Now available
in a *new edition* . . .
with *new figures.*

This popular booklet points up the important sales problem of personnel turnover in industry. Out of every 1,000 key men (over a 12-month period) 343 new faces appear . . . 65 change titles . . . 157 shift . . . and 435 stay put. These figures are based on average mailing address changes on a list of over a million paid subscribers to McGraw-Hill magazines.

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Tips for Maintaining Speed-Regulating Rheostats

To keep starting and speed-regulating rheostats in good operating condition, all you usually need is periodic cleaning, inspection, and smoothing the contacts with a file.

This low cost of upkeep for rheostats is a result of features such as magnetic-blowout devices, high-contact pressures, contacts raised above the face plate, rugged moving parts, and easy accessibility.

However, some arcing and burning of contact-making parts is unavoidable; and you must dress contacts with a file occasionally. Contacts must always be smooth.

After each treatment with a file (never use emery cloth), clean all parts thoroughly, including surfaces between contacts. Grease contacts very lightly with vaseline. Sometimes the metal is cut by sharp contact edges or by abrasive matter in the air. If there's abrasive matter in the air, omit greasing.

Turned Contacts Give Double Life

Most rheostats have movable and stationary contacts that can be turned over and used on the other side; this action gives double life. But turn them over only when abnormal burning and subsequent dressing with a file has made adjacent contact surfaces uneven.

The moving contact must bridge and be in firm contact with each adjacent stationary contact. If these points are not checked, irregular increments in speeds and voltage result.

On larger rheostats or those with movable compensating-type contacts, a slight variation between contact surfaces does not impair operation. It is best to turn over all contacts at the same time.

Oxides form on unused copper surfaces. Remove this film with a fine file and clean the surfaces before you place the rheostat in service.

Spring Tension Must Be Correct

Maintain firm pressure between moving and stationary contacts by proper spring tension to minimize pitting, heating, and oxidation. You can check the moving contact-spring pressure recommended for each type of rheostat with a hook spring balance that measures the pull in pounds necessary to separate the contacts. But in many instances, this practice is impractical.

The desired limit on spring adjustments is to provide a pressure not great enough to injure the surface of moving or stationary contacts. The pressure also should not set up a frictional force to prevent resetting of the arms on low-voltage-release rheostats.

The turns of the spring should not touch when the spring is compressed. Discard weak springs.

Best Ways To Replace Resistors

Abnormal starting or operating conditions may burn out a section of rheostat resistor. In such an instance, the face plate and the resistor can be removed from the box and damaged units repaired or replaced.

If the resistor is the wire-wound bobbin type coated with cement, put in a complete new set. If it is a suspension-grid type, replace it with the same pattern or style number. An edge-wound strap resistor can be bridged with a clamp.

In most rheostats, the field resistors can be removed from the resistor mounting without disconnecting the wiring.

Magnet Coils Can Be Adjusted

Practically all starting rheostats of low-horsepower rating have a magnet coil as part of the low-voltage release. This coil is connected directly across the line. The release is adjusted to hold the operating handle in the last running position as long as the voltage is normal.

If you want to hold the starter in at slightly less than normal voltage, the holding power of the coil can be increased by filing down the little brass pin on the moving arm. However, don't overdo this filing, and don't hold the operating arm in running position by force. It's more economical to install a new magnet coil or spring than to take a chance on harming the motor by excessive starting current.

Don't use the rheostat to stop the motor; use a safety switch or circuit breaker. *Westinghouse Electric Corp.*

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Circle A-115 on Reader Service Card

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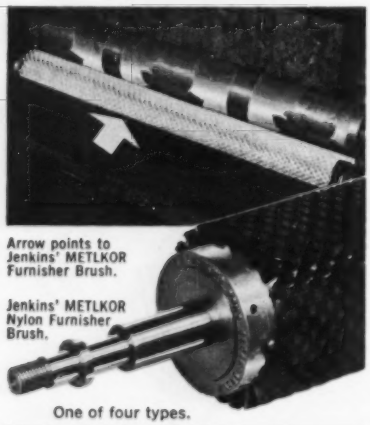
METLKOR BRUSH JENKINS RICE BARTON

Jenkins' METLKOR Furnisher Brushes, developed for Rice Barton printing machines, perform to the highest levels of reliability. They supply color efficiently and clean thoroughly the deepest or shallowest engravings.



Arrow points to Jenkins' METLKOR Furnisher Brush.

Jenkins' METLKOR Nylon Furnisher Brush.

One of four types.

Jake Nieman, Boss Printer of Manhattan Print Works Division of Waldrich Co., Passaic, N. J., one of the first to try these superior brushes, says, "We have been using Jenkins' METLKOR Furnisher Brushes in our Rice Barton printing machines for nearly 20 years. They measure up to the high standards we have set for the quality work we do."

In addition to a complete line of brushes for printers, Jenkins' also makes brushes for: Shears, Carbonizers, Singers, Tenter Frames and all other Textile Wet and Dry Finishing Processes.

Specify Jenkins' METLKOR
the original . . . the best *Metal Core* brush

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CYLINDER BRUSHES
and LIFEWOOD® WOOD BACKED BRUSHES

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Circle A-116 on Reader Service Card

FULL-FASHIONED STOCKINGS drop into the plastic containers under the chute after they are seamed. The stockings are then inspected in chain form.

New Seaming Method Helps F.-F. Hosiery Production

• By seaming full-fashioned stockings in chain form, seamers at Charles H. Bacon Co. have increased production 3 doz. pairs of stockings per day

A NEW SEAMING METHOD at Charles H. Bacon Co., London, Tenn., is helping to speed production of full-fashioned hosiery. Modifications to inspecting machines make the method possible and allow the stockings to be processed in string formation.

Seaming, inspecting, and mending stations are arranged in units. One inspecting machine services six seaming machines, and one mending station services two inspecting machines.

The seaming machines in each unit are arranged in a circle with the operators facing the center. Stockings are delivered from the knitting room, and 3 doz. pairs of stockings are hung on racks on the outside of the circle. These racks are screwed to the floor between the seaming machines.

The seamer lifts the guide, places the toe of the stocking in the cups, and runs the machine in the usual manner. However, the chain between the stocking is not cut. Each stocking falls into a chute that guides the stocking into a plastic container positioned under the chute.

By eliminating the cutting of the chain at the end of each stocking, seamers are able to increase their production by 3 doz. pairs per day. Each plastic container holds about 15 doz. pairs of seamed stockings.

At the completion of the lot, the seamer cuts the chain; and the lot ticket is placed on the last stocking that was seamed. The containers are then moved to the center of the unit close to the inspecting machine.

When the stockings are ready to be inspected, the inspector puts the plastic container under a feed attachment that has been added to the inspecting machine. She draws the first stocking through a tension device and on the inspecting form.

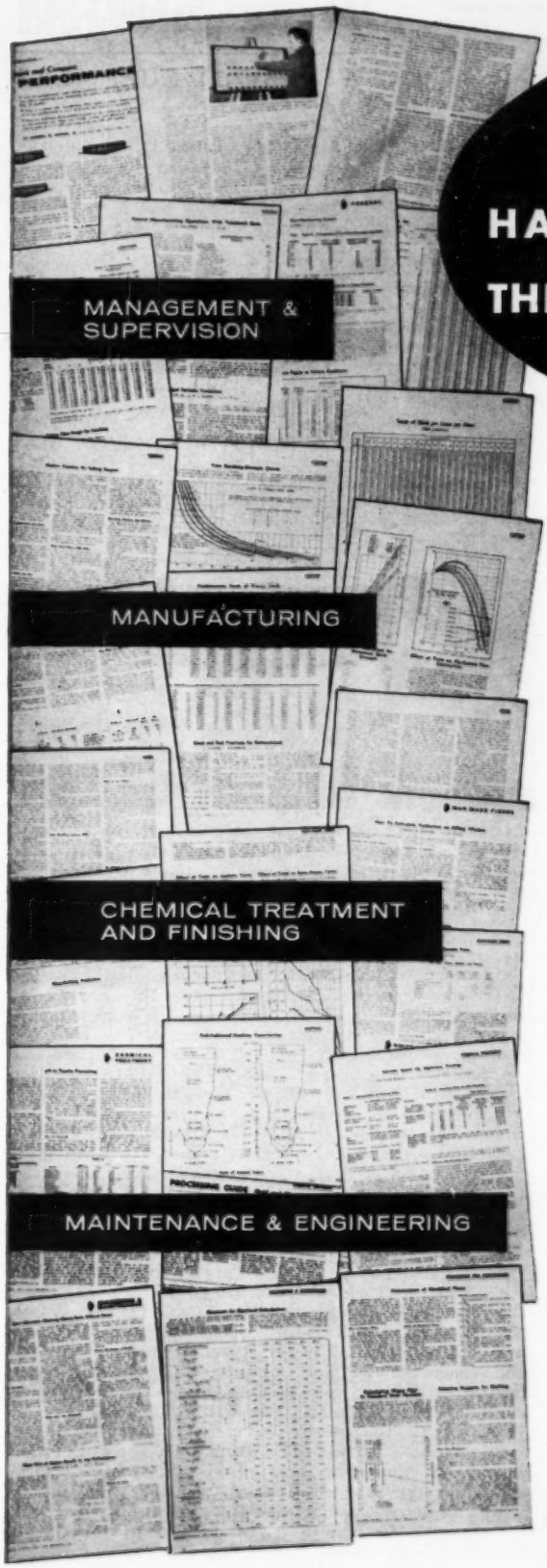
As she turns the form, a cam on the right side of the machine starts a mechanism that cuts the chain between the stocking on the form and the one held in the tension device.

To keep the second stocking from overrunning, Bacon has added a weight to the tension gate. The throat of the knife that cuts the chain has been opened to make a precise cut between the toe of one stocking and the welt of the next stocking.

When the stocking has been inspected and found perfect, it is drawn through the hollow form. If found faulty, the stocking is removed and placed on the machine in front of the operator. The operator grasps the welt of the second stocking and draws it on the form.

Perfect stockings are laid in front of the operator, who rolls the stockings into lots of 1 doz. pairs and places them in bags supported on a capstan, which holds five bags, at her right.

Each bag holds 3 doz. pairs of stockings. When all bags are full, they are removed and placed in a truck to be delivered to the dyehouse. Empty bags are then drawn on the capstan to be filled. Inspectors' production is about 210 doz. pairs per 8 hrs.



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Requests have been pouring in from every segment of the industry — KNITTING, CHEMICAL TREATMENT, MANUFACTURING, ENGINEERING —

"The reference data section is very good, but you should continue to expand it."
President—Knitting Co., Creston, N. C.

"I would like to have you print problems of some major troubles of superintendents and how they overcome them. We all have problems that come up from day to day." **Superintendent—Woolen Mill, Portland, Ore.**

"Would appreciate more items relating to dyeing and finishing."
Superintendent of Dyeing—Dye Works, Paterson, N. J.

"Mill reference data is a gem. Should be issued by itself." **Research Engineer—Yarn Mill, Clarkdale, Ga.**

The 1959 FACT FILE will be a *reader-tailored* product — designed and edited to be of value throughout the plant every day for a full year! Four Publications-within-a-Publication — each complete with unduplicated Handbook Data and related advertisements:

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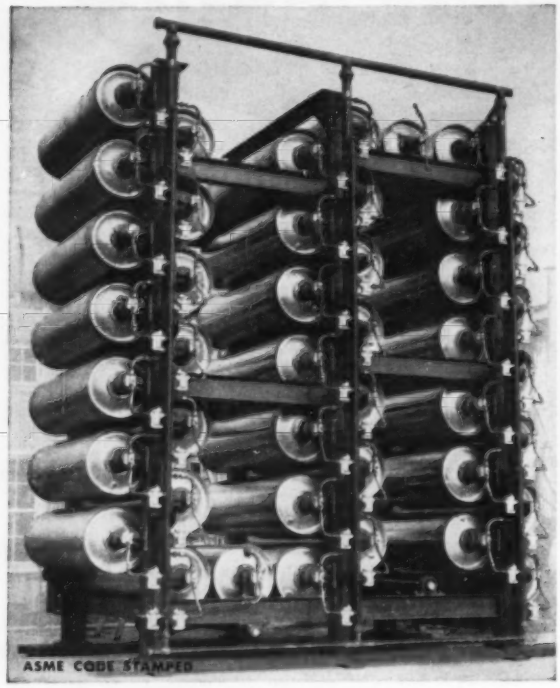
WATCH FOR MID-JULY

PROVEN SUPERIOR

In actual day to day operation where the real worth of machinery is tested, Sims new Stainless Steel 75 psi reversed dished head 44 Dry Cans* are proven superior. They require less horse power . . . are easier on bearings . . . and save floor space with no loss in drying surface. And, the chain drive is on one side of the can, while the steam fittings are on the other side . . . permitting maintenance of the drive without time lost waiting for steam pipes to cool.
Furnished Teflon-coated if desired.



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Friday Textile Machine & Supply Co., Gastonia, N. C.

NEWS ABOUT SUPPLIERS

ALLIS-CHALMERS MFG. CO., INDUSTRIES GROUP, Milwaukee, Wis.,—Has named B. C. Halsted manager of the Richmond, Va., district. W. R. Broaddus, Jr., has been named representative in the Atlanta, Ga., district; and J. W. Hagan has been named representative in the Birmingham, Ala., district.

AMERICAN ENKA CORP., New York, N. Y.—Has named J. C. Webb to the Industrial-Yarn Sales Dept. as sales coordinator. M. Boylan Carr and T. R. Thayer have been appointed marketing managers for the company's two major-product areas. Mr. Carr is marketing manager for rayon and nylon yarns and fibers. Mr. Thayer is rayon-staple and industrial-products marketing manager. . . . **AMERICAN MONORAIL CO.,** Cleveland, Ohio—Has appointed Roberts Co. de Mexico, Puebla, Pue, Mexico, as its dealer in Mexico. . . . **AMERICAN TEXTILE MACHINERY ASSOCIATION,** Hopedale, Mass.—Has named J. H. Hunter, president of James Hunter Machine Co., North Adams, Mass., head of the Membership Committee. R. Pennock, vice president in charge of sales, Universal Winding Co., Providence, R. I., will replace R. Leeson on the Exhibition Committee.

TALCOTT M. BANKS (left) has been elected a vice president of H. F. Livermore Corp., Boston, Mass. JACK BRADLEY (center) has been named assistant sales manager of the Industrial Div., Lincoln Engineering Co., St. Louis, Mo. CHARLES T. WOOLLEN (right) has been appointed a vice president in charge of the Charlotte Carton Co. Div., Lassiter Corp., Charlotte, N. C.

ATLAS POWDER CO., Wilmington, Del.—Has appointed W. R. Lucas manager of the company's regional chemicals-sales office in Chicago, Ill. E. M. Simon, Jr., will succeed him as assistant manager of the New York office. Arthur Green has been transferred from New York City to the New England area with headquarters in Boston. . . . **BECCO CHEMICAL DIV., FOOD MACHINERY & CHEMICAL CORP.,** Buffalo, N. Y.—Has promoted E. A. Dalmas to assistant manager of the Southern sales territory. . . . **BERKSHIRE COLOR & CHEMICAL CO.,** Delawanna, N. J.—Has opened a new Southern branch office with complete warehouse facilities and laboratories in Charlotte, N. C. . . . **CELANESE CORP. OF AMERICA,** New York, N. Y.—Has named Dr. R. D. Williams manager of product development for the Fiber Div. H. F. Elsom has been named a group leader for textile-product development.

COLTON CHEMICAL CO., DIV. OF AIR REDUCTION CO., INC., Cleveland, Ohio—Has named S. E. Werner head of the company's new sales office in Tampa, Fla. . . . **CONTINENTAL-DIAMOND FIBRE CORP.,** Newark, Del.—Has announced that F. M. Grauer, vice president, will assume complete responsibility for product pricing, advertising, and public relations. A. J. Briggs will be in charge of sales and marketing activities. . . . **DEWEY & ALMY CHEMICAL DIV., W. R. GRACE & CO.,** Cambridge, Mass.—Has named E. L. Kraft manager of manufacturing of the Battery, Polyfibron & Textile Div. W. A. Morton has been named assistant research manager in the organic-chemicals research laboratory. . . . **DIXON CORP.,** Bristol, R. I.—Has announced that R. Campbell will be stationed in Greensboro, N. C., to service Dixon change-overs for spinning frames.

DOW CHEMICAL CO., Midland, Mich.—Has announced that Technical Service and Development has become part of the Chemicals Dept. The Boston, Mass., office is now occupying a specially planned office area featuring a teletype-communications center. . . . **E. I. DU PONT DE NEMOURS & CO., INC.**, Wilmington, Del.—Has promoted E. H. Bleckwell to assistant general director of the company's Textile Fibers Sales Divs. A. B. Owens, manager of the Atlanta, Ga., district office of the Dyes & Chemicals Div., has retired. At the same time the Atlanta, Ga., and Charlotte, N. C. offices were consolidated, with offices in Charlotte. . . . **FABRIONICS CORP.**, Huntington, L. I., N. Y.—Has been named exclusive distributor for the yarn-filament counter developed by the British Rayon Research Institute. . . . **FOOD MACHINERY & CHEMICAL CORP., WESTVACO MINERAL PRODUCTS DIV.**, New York, N. Y.—Has named P. K. Mooney New York district sales manager.

WILLIAM G. HOWELLS (left) has been elected secretary and a director of Merrow Machine Co., Hartford, Conn. NAT STEADMAN (center) has been appointed national sales manager of the Folding Carton Div., Mead-Atlanta Paper Co., Atlanta, Ga. RUSSELL GILL (right) has been named sales consultant on textile-chemical auxiliaries for sizing and finishing for Arnold, Hoffman & Co., Providence, R. I.

GOODYEAR TIRE & RUBBER CO., Akron, Ohio—Has split the New York sales and service district of the Industrial Products Div. The districts will be known as New York district, North, and New York district, metropolitan. L. C. Keller has been named sales engineer in the Plastics Dept., Chemical Div. . . . **HEYDEN NEWPORT CHEMICAL CORP.**, New York, N. Y.—Has named E. H. Herrick manager of the Garfield, N. J., plant. . . . **HOBBS MFG. CO.**, Worcester, Mass.—Has named Larry Damour district sales manager for its Cleveland, Ohio, territory. . . . **HOOKER CHEMICAL CORP., EASTERN CHEMICAL DIV.**, Niagara Falls, N. Y.—Has named C. Y. Cain assistant sales manager and C. W. Selover manager of purchases. J. S. Coey is now sales manager of the division. . . . **INTERCHEMICAL CORP., COTAN DIV.**, Newark, N. J.—Has appointed H. P. Greenberg Co., Inc., New York, N. Y., sales agents for Cotan's new line of Coflex outerwear vinyl fabrics.

JOHNSON MOTOR LINES, INC., Charlotte, N. C.—Is undergoing a $1½-million equipment modernization program. . . . **JOY MFG. CO.**, Pittsburgh, Pa.—Has established a district office for the Industrial Div. in Philadelphia, Pa. R. H. Schlobohm is district manager. . . . **LORD MFG. CO.**, Erie, Pa.—Has opened a field engineering office in San Francisco, Calif. . . . **MANTON-GAULIN MFG. CO., INC., INDUSTRIAL DIV.**, Everett, Mass.—Has named C. H. Leveritt direct factory-sales and service representative, with headquarters in Decatur, Ga. . . . **METAL FILM CO., INC.**, New York, N. Y.—Has named Mrs. Ann Smith fashion sales coordinator. . . . **MONSANTO CHEMICAL CO.**, St. Louis, Mo.—Has named J. R. Alexander senior technologist with the company's Inorganic Chemicals Div. . . . **MORRISON MACHINE CO.**, Paterson, N. J.—Has announced plans to build a new plant for the manufacturing of dyeing and finishing machinery on a 60-acre site in Fort Lawn, S. C.

Shamrock No. 19 Trucks with "Vyntex" Plastic-coated Duck Body.

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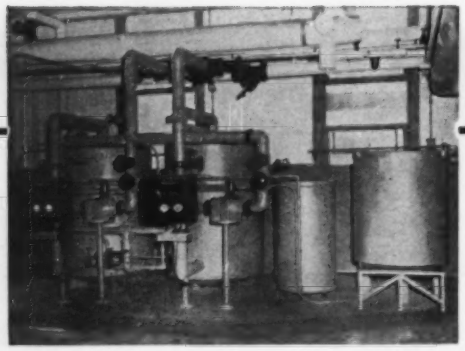

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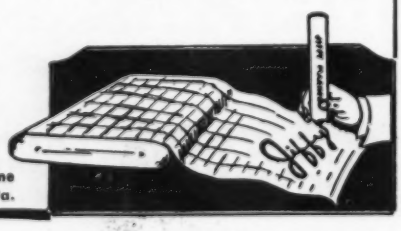


For more data, circle A-121 on Reader Service Card

NEWS ABOUT SUPPLIERS Continued

NOPCO CHEMICAL CO., Newark, N. J.—Has named E. S. Stevens to the Industrial Development Laboratory staff. . . . **ONYX OIL & CHEMICAL CO.**, Jersey City, N. J.—Has named Robert Freeman sales representative in the metropolitan New York-New Jersey areas, with headquarters in Jersey City. . . . **RAYBESTOS-MANHATTAN, INC., MANHATTAN RUBBER DIV.**, Passaic, N. J.—Has announced that J. H. Matthews, executive vice president, has retired from full general-management responsibilities. He will continue as a director and as a consultant. The new divisional manager is J. N. Kuzmick. C. P. Schneider has been promoted to assistant to the divisional manager. . . . **ROBERTS CO.**, Sanford, N. C.—R. F. Long has joined the company in the technical-service department. E. W. Blackwood and G. P. Stanley have joined the staff as sales engineers.

JAMES C. SHORE (left) has been promoted to sales manager in charge of all Northern sales for Metro-Atlantic, Inc., Centerdale, R. I. **DAVIS E. WILLIAMS, JR.**, (center) has been named district manager of the Charlotte, N. C., office of National Vulcanized Fibre Co. **LELAND F. REMINGTON** (right) has been elected vice president of manufacturing of Curtis & Marble Machine Co., Worcester, Mass.

BENNETT ROSE CO., Roebuck, S. C.—Has announced that Bennett S. Rose has sold his interest in the company to J. F. Timms, Mae Cudd, Paul Teaster, and Horace Williams. . . . **JOSEPH T. RYERSON & SON, INC.**, Chicago, Ill—Has named J. A. Moran sales manager, and A. B. Burke and N. B. Caldwell district sales managers. . . . **SKF INDUSTRIES, INC.**, Philadelphia, Pa.—Has appointed E. C. Denne, Jr., to direct bearing-development design and engineering services for heavy industrial applications. P. S. Given is in charge of design and development of bearing applications. . . . **SACO-LOWELL SHOPS**, Boston, Mass.—Has elected Royden Walters vice president. B. J. Zalkind has rejoined the company as consulting engineer in the Product Engineering Dept. in Easley, S. C.

A. E. STALEY MFG. CO., Decatur, Ill.—Has formed a new process-service section in the manufacturing division. . . . **TEXIZE CHEMICALS, INC.**, Greenville, S. C.—Will handle all accounts on a direct-sales basis. . . . **TEXTILE MACHINE WORKS**, Reading, Pa.—Has assigned patents on its automatic hosiery-inspection machine to Southern Textile Machinery Co., Inc., Paducah, Ky. . . . **TRUST CO. OF GEORGIA**, Atlanta, Ga.—Has named H. W. Sterns assistant treasurer. . . . **UNION CARBIDE CHEMICALS CO.**, New York, N. Y.—Has named R. L. Duncan director of product marketing. J. R. Howell has been named district manager, Albany, N. Y. R. W. Martin has been promoted to assistant district manager, Chicago, Ill., and C. D. Preston has been promoted to assistant district manager in the New York, N. Y., district. . . . **UNITED STATES STEEL CORP.**, New York, N. Y.—Has named B. P. Doty, Jr., general sales manager for the American Steel & Wire Div. . . . **VICKERS, INC.**, Detroit, Mich.—Has named A. H. Van Wormer sales manager of the Industrial Products Dept., Machinery Hydraulics Div. . . . **WARNER & SWASEY CO.**, Cleveland, Ohio—Has elected L. M. Cole vice president in charge of sales. . . . **WHITIN MACHINE WORKS**, Whitinsville, Mass.—Will buy American Type Founders Co., Inc., Elizabeth, N. J. . . . **WYANDOTTE CHEMICALS CORP.**, Wyandotte, Mich.—Has started production at its new chlorine-caustic soda plant at Geismar Works, near Baton Rouge, La.

NEWS ABOUT MEN

Charles L. Amos has been named chairman of the board of directors of Melrose Hosiery Mills, High Point, N. C. His son, Charles Lee Amos, Jr., is the new president.

Ronald W. Anderson has been named plant engineer of Appleton Woolen Mills, Appleton, Wis.

W. E. Ashley has been appointed superintendent of slashing and weaving at Riegel Textile Corp.'s gray mill at Trion, Ga.

B. R. Black, Jr., has been named general overseer of weaving at the Lockhart plant of Monarch Mills, Lockhart, S. C.

Frank Blue has been named manager of the Valley Falls, R. I., division of Sidney Blumenthal & Co., Inc., succeeding Ernest Chew.

Ernest M. Boys has been named general manager of Chronicle Mill, National Yarn Mill, Inc., Stowe Spinning Co., and Imperial Yarn Mills, Belmont, N. C.

Harold S. Bullard has been appointed assistant to the president for cotton goods at Greenwood Mills, Inc., New York, N. Y.

George R. Caron has been appointed treasurer of Continental Mills, Lewiston, Me.

JAMES A. CHAPMAN, president of Inman and Riverdale Mills, Inman, S. C., has been elected president of the American Cotton Manufacturers Institute.

John C. Conniff has been elected vice president in charge of general operations of Dan River International Corp., New York, N. Y.

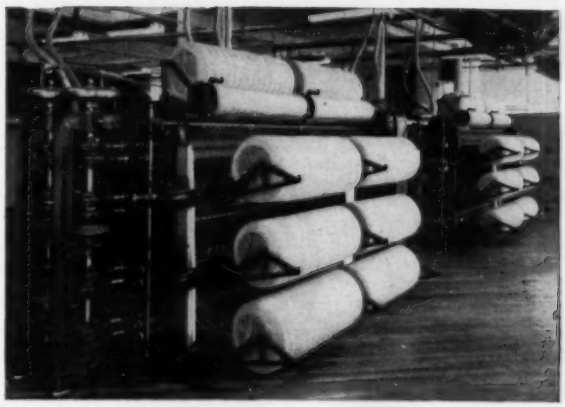
Elton D. Crenshaw has been named plant manager at Drayton Mills, Spartanburg, S. C.

J. Morgan Davis has been promoted to manager of Coats & Clark, Inc., Acworth, Ga.

Milton K. Emerson has joined Hellwig Dyeing Corp., Philadelphia, Pa., as manager of the fabric division.

Earle H. Greene has been promoted from special-projects engineer to development engi-

J. M. CHEATHAM (left), president of Dundee Mills, Inc., Griffin, Ga., has been named first vice president of ACMI; and ROBERT DAVIDSON HALL (right), a Belmont, N. C., textile executive, has been elected second vice president.



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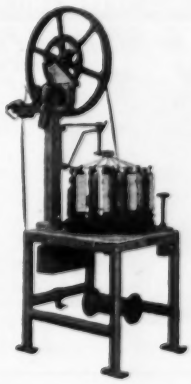

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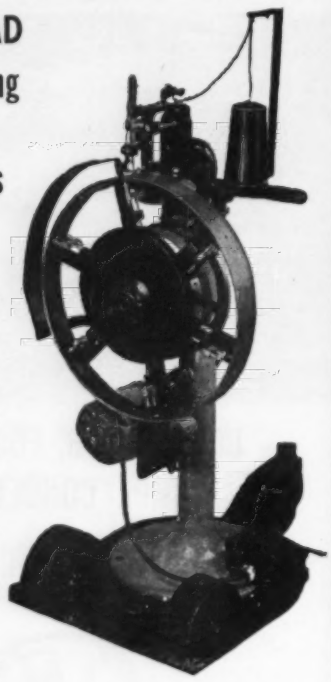

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NEWS ABOUT MEN Continued

GEORGE I. SIMPSON (left) and W. H. SPARKS (right) have been named vice presidents of Collins & Aikman, New York, N. Y. Mr. Sampson is also general manager of the Yarn Div., and Mr. Sparks is general manager of the Mayfair Carpet Div.

neer at Excelsior Mills' Clemson Plant, Clemson, S. C.

William H. Grier has been elected president of Rock Hill Printing & Finishing Co., Rock Hill, N. C., and Lyman Printing & Finishing Co., Lyman, N. C.

Marvin Gutschmit has been named vice president of Sesom Knitting Mills, Inc., New York, N. Y.

Harry W. Hawksley has been named plant manager for Julee Mfg. Co., Springfield, Mass.

John G. Heald has been appointed assistant manager of the Infants' Div. of The William Carter Co., Needham Heights, Mass.

Sam Homewood has been promoted from superintendent of the Raeford Div. of Pacific Mills to plant manager of the company's mill at Hot Springs, N. C.

Clifton Wayne Howell has been named manager of Erwin Mills' plants in Erwin, N. C. He had been manager of the company's No. 3 plant in Cooleemee, N. C.

Kermit Lowery has been named general manager of all manufacturing at Carwood Mfg. Co., division of Chadbourn Gotham, Inc., Winder, Ga.

John McGuire has been named manager of Airedale Worsted Mills, Inc., Statesville, N. C.

Walter S. Montgomery, Jr., has been named vice president of Spartan Mills, Inc., Spartanburg, S. C.

A Keith Pooser has been appointed chief engineer of American Thread Co., Brevard, N. C.

Richard B. Port has been elected to the board of directors of P. H. Hanes Knitting Co., Winston-Salem, N. C.

L. T. Prigmore, Jr., has been named plant manager of Dixie

FREDERICK R. LENK (left) has been named assistant plant manager of the nonwoven-fabrics manufacturing plant of Chicopee Mfg. Corp., Milltown, N. J. JOHN F. PECK (cented) has been named superintendent of finishing at the plant, and JOSEPH J. KAPOLKA (right) has been named superintendent of production.

Mercerizing Co.'s plant in Lupton City, Tenn.

Jack Pruitt has been named director of a fabric laboratory for M. Lowenstein & Sons, Anderson, S. C.

Vincent M. Relly has been named vice president of Russell Hosiery Mills, Inc., New York, N. Y.

George B. Retz is joining Glenoit Mills, Janesville, Wis., as manager of the men's and boy's outerwear division.

Walter G. Seidl has been elected vice president of Anglo Fabrics Co., Webster, Mass.

Frank C. Sherrill has been named technical superintendent of Joanna Cotton Mills Co., Joanna, S. C. He was formerly chief industrial engineer.

G. G. Simmons has been elected treasurer of Hartsville Cotton Mill, Inc., Hartsville, S. C.

Peter J. Stalker has been appointed manager of manufacturing at Carleton Woolen Mills, Rochdale, Mass.

J. H. Sutherland has retired as vice chairman of J. P. Stevens & Co., Inc., New York, N. Y.

Thomas J. Willis has been appointed assistant division superintendent of Dan River Mills' Alabama Div. and No. 1 Div., Danville, Va.

Textile World

OBITUARY

John P. Bestercy, 57, secretary and treasurer of Enduro Piece Dye Works, College Point, N. Y.

Gilbert A. Cartier, 54, general manager of Coventry Lace Works, Coventry, R. I.

Robert M. Hanes, 68, a former director of P. H. Hanes Knitting Co., Hanes Dye & Finishing Co., and Chatham Mfg. Co., Winston-Salem, N. C.

Dorus Hammonds, 59, president of the former Hendor Mills, Paterson, N. J.

Clive E. Hockmeyer, 66, former vice president of Hockmeyer Bros., Lowell, Mass.

Ralph M. Holt, 61, president of Holt Hosiery Mills, Inc., Burlington, N. C.

R. Oakley Kennedy, 73, retired vice president of production and a director of Cluett, Peabody & Co., Inc., New York, N. Y.

John A. Lyons, 86, retired vice president of Orr-Lyons Mills, Anderson, S. C.

Guy Parmenter, 70, retired superintendent of Goodyear Tire & Rubber Co.'s Clearwater Plant No. 3, in Atco, Ga.

Philip Rosch, 59, superintendent of Somersville Mfg. Co., Somersville, Conn.

Ben R. Rudisill, 42, president and treasurer of Carlton Yarn Mills, Cherryville, N. C., and former president of the Combed Yarn Spinners Association.

Dr. Sam M. Schenck, 63, chairman of the board of Cleveland Mills Co., Lawndale, N. C.

Charles F. Smith, 78, retired president and general manager of Josephine Mills, Marion, N. C.

R. B. Taylor, 44, textile chemist, Belrug Mills of S. C., Greenville, S. C.

George H. Walker, 70, part owner and secretary and treasurer of Harwall Mills, Inc., West Warwick, R. I.

George Calvin Warren, Jr., technical superintendent of Russell Mfg. Co., Alexander City, Ala.

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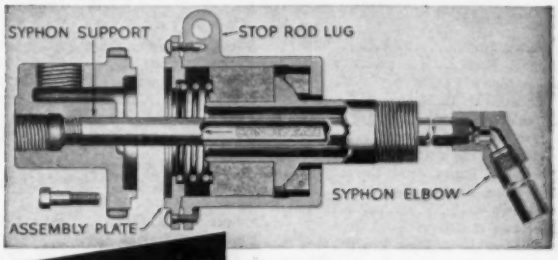

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1—Andrews-Goodrich Loop Dryer, 27', 94" stick—1945
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1—Nat'l Loop Dryer, Model E, 102, 8 fan
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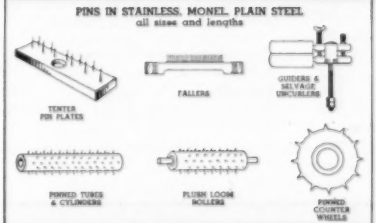

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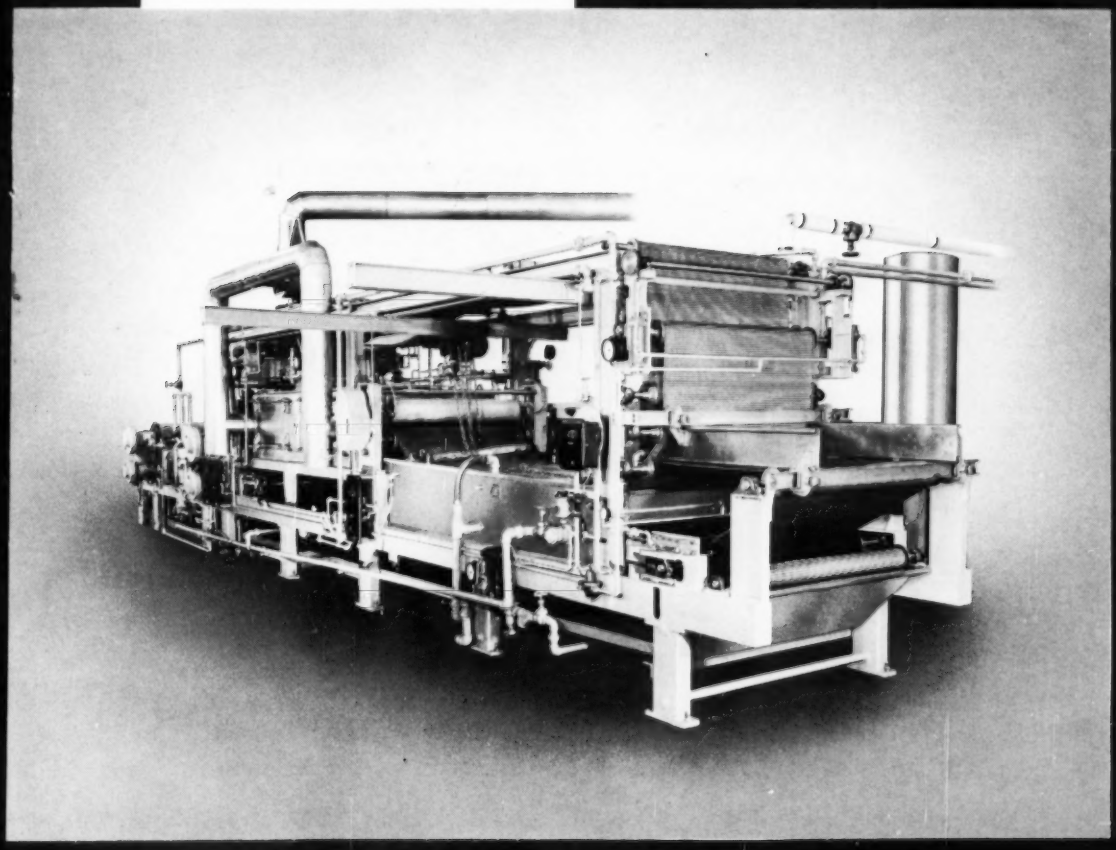

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